



GUIDELINES FOR FAIR MARKET VALUE (FMV) APPRAISAL OF MINERAL INTERESTS

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INTRODUCTION

Appraisals for minerals under concern with the Federal Government almost always fall into one of five categories. These categories are: Mineral Material Sales, Mineral Trespass, Mineral Conveyance, Condemnation and Taking, and Exchanges. This Guideline has discussions of the techniques necessary to make a mineral appraisal in each of the five categories. Below are brief discussions, and references for detailed information for each of the categories.

A. MINERAL MATERIALS SALES - MINERAL ROYALTY

The Materials Act of July 31, 1947, as amended by Public Law 167 (Multiple Use Mining Act) of July 23, 1955 (30 USC 601), authorized the disposal or sale of certain types of mineral materials on public lands in the United States. Disposal is through competitive or noncompetitive contracts or free-use permits rather than by mining claim location under the Mining Laws. In fact, salable minerals cannot be sold, even under BLM contracts, from unpatented mining claims (43 CFR 3601.1-l(1)).

Collectively, these salable minerals include, but are not limited to common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay. A lengthy definition of common variety mineral materials is given at 43 CFR 3711.1(b). Conditions and procedures for sales or disposals on BLM-administered land are found at 43 CFR 3600 (see Attachment A-2), BLM Manuals 3600, and 3630, and BLM Handbooks H-3600-1 and H-3630-1.

While the key appraisal word above is sale, the key word should be royalty. Therefore, if the BLM or USFS "sells" material, it is sold by means of a reasonable royalty rate with any appropriate upfront payments. If another Department of Interior Agency such as the Bureau of Reclamation (BOR) offers a lease, it is just that - a lease. Royalty and other conditional payments are negotiated independently with the BOR and a private party. The laws and regulations mentioned above do not apply. See Part IV C of these Guidelines and Attachment A-2.

B. MINERAL TRESPASS

The unauthorized extraction, severance, injury, or removal of mineral materials from public lands under administration of the Department of Interior is an act of mineral trespass (43 CFR 9239.0-7). See Attachment A-3.

There are two types of mineral trespass: willful and innocent. A willful trespass is one done deliberately, recklessly, intentionally, or willfully with knowledge that it was in violation of law. An innocent trespass is one where the taking of material was done inadvertently, innocently, and in good faith under a genuinely mistaken belief of a right to extract the material (BLM Manual, 9235.05)

Further - "the test to determine whether one was a willful or an innocent trespasser is not his violation of the law in the light of the maxim that every man knows the law, but honest belief, and his actual intention at the time he committed the trespass; and neither a justification of the acts nor any other complete defense to them is essential to the proof that he who committed them was not a willful trespasser" - U.S. v. Homestake Mining Co., 117 F. 481 (18th Cir., 1902).

According to 43 CFR 9239.5-1 the measure of damages for ores (minerals) is the same as in the case of coal except where there is State law governing such trespass. The determination of payment in coal trespass is as follows: for innocent trespass payment must be made for the value of the coal in place before severance; for willful trespass payment must be made for the full value of the coal at the time of conversion without deduction for labor bestowed or expense incurred in removing and marketing the coal. See 43 CFR 9239.5-3(a)(1)(2).

As California has no State law governing willful trespass, the appraiser should use the full value of the minerals at the date of conversion. Therefore, the current f.o.b. selling price is assessed for all prior sales of material. The use of a current date is based on the assumption that if the minerals were not extracted, they would be available for extraction in a current market at a current price.

However there is a State law governing innocent trespass. In U.S. v. Marin Rock and Asphalt Co., 296 F. Supp. 1213 (1969), the court ruled that (1) either a reasonable royalty rate, or the value of extracted minerals less costs of production are the appropriate measure of damages to be used by a plaintiff suing a good-faith (innocent) trespasser. For our purposes, a reasonable royalty rate as of the appropriate date is used in determining the measure of damages for innocent trespass. The second method is not used because of the difficulty of obtaining needed input data. See also 95 IBLA 144 (1987) for further legal detail, and Part IV C of these Guidelines.

Public Law 89-505, No. 1, July 18, 1966, (80 Stat 305) gives a limitation of time during which the Government may institute a suit to collect a measure of damage. Suits to recover a measure of damage for a mineral trespass on public lands are barred unless the Government files a complaint in court within 6 years after the mineral trespass. Also, the pendency of a contest proceeding in the Department of Interior does not suspend or interrupt the running of the statutory 6-year period.

C. MINERAL CONVEYANCE

Conveyance of mineral interests (mineral deposit) owned by the U.S. where the surface is or will be in non-Federal ownership is possible (43 CFR U.S.C.1719 - section 209 of FLPMA, 1976). The purpose of conveyance is to consolidate surface and subsurface or mineral ownership where "no known mineral values" are present or where mineral values are present but the reservation of the mineral estate is interfering with or precluding appropriate non-mineral development, and such development is a more beneficial use of the land than the mineral development. Overall guidance for mineral conveyance is found in 43 CFR 2720 and in Wayne D. Klump, et al., 123 IBLA 51 (1992). See also Attachment A-4.

"Known mineral values" means mineral rights in lands containing geologic formations that are valuable in the monetary sense for exploring, developing, or producing natural mineral deposits. The presence of such mineral deposits with potential for mineral development may be known because of previous exploration, or may be inferred based on geologic information (43 CFR 2720.0-5(b)).

Preliminary work for mineral values can be complex, but eventually a fair market value (FMV) of the Federal mineral deposits may have to be determined. Any exploration for minerals and or the determination of FMV must be paid for by the owner of the surface. See Parts IV D, and E of these Guidelines.

D. CONDEMNATION AND TAKING

The government has the power (Eminent Domain) to take property for public use without the consent or acceptance of the owner. A government agency will almost always make an upfront money offer on a property in question. If a resolution is not achieved with the property owner, the government will condemn the property and began court action. Even with eminent domain the government must pay just compensation for the property. See Attachment A-5.

A taking occurs whenever there is a substantial interference with the free use and enjoyment of a property. Just compensation usually means that the property owner should be put into as good a monetary position as he would have been if the taking did not happen. In regards to minerals specifically, this situation usually translates into FMV of the mineral interests. Generally it is the FMV of the whole property as enhanced by economic minerals that has to be determined.

A question arises as to what mineral interest is to be appraised - royalty interest or the operator's interest (value of mineral deposit). Where a taking has occurred and a lessor (property owner) is receiving royalty payments from a lessee, the royalty interest has been used. Where the property owner is mining a deposit and no lessee exists, the matter is not so clear. While royalty value has been used, the determination of the operator's money interest is not precluded (value of reserves and any facilities). See Parts IV C, D, and E of these Guidelines.

For guidance in FMV determination of mineral interests (dolomite deposit) see Jack S. Foster, et al. v. The United States 2 Cl. Ct. 426(1983) aff'd, 746 F. 2d 1491 (Fed. Cir. 1984), cert. denied, 471 U.S. 1053 (1985) - especially pages 426-247, and 448-449. Some of the important items listed on pages 426 and 427 are given below as bullets. See also 43 CFR 2130 (Attachment A-5).

- 2. Eminent Domain - Guiding principle of just compensation is to reimburse the owner for the property that was taken; "just compensation" means the full monetary equivalent of that property; owner is to be put in the same position, from a monetary standpoint, as he would have been without the taking; he is to be made whole but he is not entitled to more.

- 4. Eminent Domain - The burden of establishing the value of the property taken rests upon the claimant.
- 5. Eminent Domain - There is no compensation for frustrated contracts or for loss of future income; sovereign must pay only for what it takes, not for opportunities which the owner loses.
- 6. Eminent Domain - Essential question in an eminent domain proceeding is always what has the owner lost, with the owner's indemnity measured in different ways dependent on the circumstances of the case.
- 7. Eminent Domain - Just compensation invokes the equitable powers of the court and there is wide latitude of judicial discretion to include or exclude particular elements of damage.
- 8. Eminent Domain - In most cases, question of just compensation can be answered by ascertainment of the market value, i.e., what a willing buyer would pay in cash to a willing seller.
- 9. Eminent Domain - Fair market value is not an absolute standard, nor is it the exclusive method of valuation of the taken property; where comparable sales data is lacking, resort may be had to the best available data which even though somewhat uncertain, is sufficient to produce a value on a reasonably informed basis.
- 10. Eminent Domain - Mere physical presence of a mineral on land is not enough to establish a right to just compensation; there must be a showing of a market which the mineral from that land could reasonably supply.
- 11. Eminent Domain - Evidence of value of the taken property is largely a matter of opinion and some speculation is inherent in the ascertainment of the value of any underground resources, such as minerals, oil, or gas.
- 12. Eminent Domain - Traditional and most frequently employed technique for obtaining fair market value is the market data or comparable sales approach; other techniques include capitalization of income, sometimes referred to as discounted cash flow or present worth of future income, or the cost approach which uses depreciated replacement cost as the value of the asset.
- 13. Evidence - Elements of sales of distant properties, even those with different mineral content, may be comparable in an economic or market sense for purposes of determining just compensation for taking of mineral interest when due allowance is made for variables.
- 15. Eminent Domain - Direct capitalization of net income is an appropriate method for valuing the taken property only when actual income from the property can be established in a continuing ongoing business; it is of little value where the realization of an opportunity for income was not even begun as of the date of taking.
- 16. Mines and Minerals - "Royalty interest" is an interest of a passive landowner-lessor or of an inactive lessee; "operator's interest" is the interest of a person with the right, the capital, and the ability to develop, produce, and sell the mineral; both are property rights which can be bought and sold.
- 18. Eminent Domain - Capitalization of income approach to determine the value of taken property requires the future income stream to be discounted in order to obtain a present value as of the date of taking.

- **20 Eminent Domain** - In order to produce full equivalent of property taken, just compensation includes interest on the market value of mineral rights taken, computed at simple interest rates from the time of taking to the time of payment.

E. EXCHANGES

Land exchanges between the Federal government and private parties are discretionary and voluntary. The government must determine that the public interest will be well served by the exchange. See 43 U.S.C. 1716, and 1740 (FLPMA), and 43 CFR 2200 for guidance in exchange matters. See Attachment A-6.

Market value is defined at 43 CFR 2200.0-5(n) as:

(n) Market value means the most probable price in cash, or terms equivalent to cash, that lands or interests in lands should bring in a competitive and open market under all conditions requisite to a fair sale, where the buyer and seller each acts prudently and knowledgeably, and the price is not affected by undue influence.

Exchanges are to be of equal value as described at 43 CFR 2200.0-6(c) as:

(c) Equal value exchanges. Except as provided in 2201.5 of this part, lands or interests to be exchanged shall be of equal value or equalized in accordance with the methods set forth in 2201.6 of this part. An exchange of lands or interests shall be based on market value as determined by the Secretary through appraisal(s), through bargaining based on appraisal(s), or through arbitration.

Value can be equalized under certain conditions given below (43 CFR 2201.6):

(a) To equalize the agreed upon values of the Federal and non-Federal lands involved in an exchange, either with or without adjustments of relative values as compensation for various costs, the parties to an exchange may agree:

(1) To modify the exchange proposal by adding or excluding lands; and/or

(2) To use cash equalization after making all reasonable efforts to equalize values by adding or excluding lands.

(b) The combined amount of any cash equalization payment/or the amount of adjustments agreed to as compensation for costs under 2201.1-3 of this part may not exceed 25 percent of the Federal lands to be conveyed.

(c) The parties may agree to waive a cash equalization payment if the amount to be waived does not exceed 3 percent of the value

of the lands being exchanged out of Federal ownership or \$15,000, whichever is less. This provision shall not be applied to exchanges where the value differential is in excess of \$15,000.

(d) A cash equalization payment may be waived only after the authorized officer determines in writing how the waiver will expedite the exchange and why the public interest will be better served by the waiver.

Value of the private and Federal property in exchanges means FMV, and for all interest including minerals. In regard to mineral interests, it is the mineral deposit (operator's interests) that should be appraised not a mineral royalty interest. This concept is discussed in Parts IV D and E of these Guidelines.

FAIR MARKET VALUE (FMV) APPRAISAL OF MINERAL INTERESTS

I. CONCEPTS FOR FAIR MARKET VALUE (FMV) APPRAISAL

A. APPRAISAL

An appraisal is an opinion of value at the time of taking. It is supported by a logical analysis of factual data based on the knowledge, skill, experience, and ethics of the one making the appraisal (the appraiser).

B. FAIR MARKET VALUE (FMV)

FMV is the amount in cash or on terms reasonably equivalent to cash, at the time of taking, for which in all probability the mineral or real property interests would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desires but is not obligated to buy.

C. APPRAISAL PROCESS

The appraisal process involves a systematic, orderly, and logical method of collecting, analyzing, and processing data to make a proper determination of the FMV of specific mineral or commodity interests. All interests should be valued as a whole where appropriate and not by the sum of the value of the different interests, bearing in mind the concept of highest and best use and the necessary preclusion of the taking of one commodity at the expense of another commodity. If all the commodities cannot be extracted, then the one(s) with the highest value must be appraised. This is so because the taking of one would preclude the taking of another. Conjectural and speculative considerations should not be used.

An appraiser must make a complete and detailed inspection of whatever interest is involved with full consideration of applicable legal principles, laws, and regulations. Results from the appraisal process depend on the diligence of the appraiser. Carefulness and thoroughness are critical concepts to be used in the appraisal process. Ultimately, a proper appraisal is the product of the knowledge, skill, experience, and ethics of the appraiser.

D. HIGHEST AND BEST USE

Where appraisals of several varied interests are involved, such as timber, real estate, and mineral interests, and a single FMV must be made by consideration of the value of all these interests, the concept of highest and best use must be used.

For specific consideration in the appraisal process, the highest and best use sections in Table T-1 should be used. The sections are taken directly from the book Uniform Appraisal Standards For Federal Land Acquisitions, 1992, p.8-10; applicable parts.

For real estate interests one use may well preclude another (shopping center vs. golf course, and so forth) and the appraisal normally should be for the more profitable use. However, when it comes to mineral interests vs. other interests, reason must be used. Say a real estate interest appears to have a higher value than the mineral interest. It does not automatically mean that the mineral interest is precluded. However, a land parcel must be physically capable of producing minerals, and there must be a legal right to do so. Moreover, there should be a reasonable possibility of selling the mineral in the market place.

For example, a land parcel may have trees that could be logged, sand and gravel excavated from an open pit, the pit used as a wet garbage land fill with a covering dirt fill pad, subsequent production of methane gas and construction of storage buildings or a parking lot on the dirt fill pad. This example is uncommon, but shows that mineral interests could be developed along with other interests and should not be excluded from appraisal considerations.

A property should be valued as a whole and not necessarily by adding together the sum of the separately determined values for the different interests. After all one valuable use may preclude another possible, but less valuable use. The different interests should be considered for the manner in which they increase (or decrease) the FMV as a whole during a reasonable time period, because the whole property is being sold and not the separate parts. If, as in the example in the above paragraph, several uses are possible, but not all at the same time, reason must be used. The value of possible later uses must be discounted for time until income can be generated. This future discounted value can be appropriately added to the discounted value of the present use.

In regard to minerals specifically, remember:

- They must exist (physical possibility).
- Legal permission to extract them must be obtained or it is clear that permission could be obtained (legal permissibility).
- A market for the minerals in question must exist (financial feasibility).
- They are, or can be, produced economically (financial feasibility).
- Their extraction must be the most profitable venture relative to other uses over a reasonable period of time unless concurrent uses are possible (maximum profitability).

Table T-1. Highest and best use considerations (from UNIFORM APPRAISAL STANDARDS FOR FEDERAL LAND ACQUISITIONS, p. 8-10).

A-3. Highest and best use: Fair market value is to be determined with reference to the property's "highest and best use" - that is, the highest and most profitable use for which the property is adaptable and needed or likely to be needed in the near future.²² Ordinarily, the highest and best use of property is the use to which it is being subjected at the time of taking.²³ However, if the property is clearly adaptable to a use other than the existing use, its marketable potential for such use should be considered in determining the property's fair market value.²⁴

²² Olson v. United States, 292 U.S. 246, 255 (1934).

²³ United States v. Buhler, 305 F.2d 319, 328 (5th Cir. 1962). There is a presumption in favor of the existing use: United States v. 8.41 Acres of Land, Etc., 680 F.2d 388, 394 (5th Cir. 1982); United States v. 158.24 Acres of Land, Etc., 515 F.2d 230, 233 (5th Cir. 1975).

²⁴ Olson v. United States, *supra*.

A proposed highest and best use requires a showing of reasonable probability that the land is both physically adaptable for such use and that there is a need or demand for such use in the reasonably near future; physical adaptability alone is insufficient.²⁶ As has been judicially noted, "Obviously the more profitable operation must be one allowed by law to be carried out on the premises."²⁷ (See A-23, Zoning and Permits, *infra*, pp. 61-62.) In no event should the appraisal be made on the basis of one highest and best use for the land and the addition of the value of improvements for a different and inconsistent use. Various parts of a single property may have different highest and best uses as long as these uses are not inconsistent (e.g., residential or commercial along road or highway frontage and agricultural use for the rear land).²⁸ These different uses may enter into the determination of the larger parcel. In no event should the different uses be valued independently and merely added together to derive a value for the whole property. And as spelled out in more detail under the heading "Conjectural and speculative evidence" (*infra*, p.26), remote or speculative uses should not be considered.

Highest and best use cannot be predicated on a demand created solely by the project for which the property is taken (e.g., rock quarry, when only market is highway project for which property was taken).²⁹ A proposed highest and best use cannot be the use for which the government is acquiring the property (e.g., missile test range, airfield, park), unless there is a prospect and demand for that use by others than the government.³⁰

²⁶ Olson, *supra*, 292 U.S. at 256; United States v. 341.45 Acres of Land, 633 F.2d 108, 111 (8th Cir. 1980), cert. denied, 451 U.S. 938 (1981).

²⁷ United States v. Meadow Brook Club, 259 F.2d 41, 45 (2d Cir. 1958), cert. denied, 358 U.S. 921.

²⁸ United States v. 179.26 Acres of Land, 644 F.2d 367, 371 (10th Cir. 1981); United States v. 320.0 Acres of Land, 605 F.2d 762, 817 n.124 (5th Cir. 1979); Eagle Lake Improvement Co. v. United States, 160 F.2d 182, 184 (5th Cir. 1947), cert. denied, 332 U.S. 762 (1947); United States v. Carrol, 304 F.2d 300, 306 (4th Cir. 1962).

²⁹ United States v. Cors, 337 U.S. 325, 333 (1949); United States v. 46,672.96 Acres of Land, 521 F.2d 13, 15, 16 (10th Cir. 1975); J. A. Tobin Construction Co. v. United States, 343 F.2d 422 (10th Cir. 1965), cert. denied, 382 U.S. 830 (1965).

³⁰ United States v. Chandler-Dunbar Co., 229 U.S. 53, 80-81 (1913); United States v. 320.0 Acres of Land, 605 F.2d 762, 783 n.26, 811 n.107 (5th Cir. 1979); United States v. 46,672.96 Acres of Land, *supra*.

Because the highest and best use is a most important consideration, it must be dealt with specifically in appraisal reports. Many things must be considered in determining the highest and best use of the property including: supply and demand; competitive properties; use conformity; size of the land and possible economic type and size of structures or improvements which may be placed thereon; zoning; building restrictions; neighborhood or vicinity trends.

Moreover, in government administered parcels, there are usually only five possibilities for mineral development and generated income:

- A mineral materials sales royalty contract for common variety minerals.
- A lease contract (with any bonus bids and/or rentals) for leasable minerals.
- Locatable minerals sales royalty contract on certain acquired lands.
- Entry into a land exchange agreement with outside parties.
- Conveyance of mineral estate under FLPMA, Sec. 209.

E. CONJECTURE AND SPECULATION

The following text is taken directly from Uniform Appraisal Standards For Federal Land Acquisitions, 1992, p.26.

A-9. Conjectural and speculative evidence: In seeking to determine the fair market value, that is, the amount that in all probability would have been arrived at by fair negotiation between an owner willing to sell and a purchaser desiring to buy, there should be taken into account all considerations that fairly might be brought forward and reasonably be given substantial weight in such bargaining. However, in the words of the Supreme Court of the United States, "Elements affecting value that depend upon events or combinations of, occurrences which, while within the realm of possibility, are not fairly shown to be reasonably probably, should be excluded from consideration, for that would be to allow mere speculation and conjecture to become a guide for the ascertainment of value--a thing to be condemned in business transactions as well as in judicial ascertainment of truth. *

* * "67

⁶⁷ Olson v. United States, 292 U.S. 246, 257 (1934) (emphasis added). See also discussion in United States v. 320.0 Acres of Land, 605 F.2d 762, 814-820 (5th Cir. 1979).

These considerations are prevalent in the minerals field and much harder to discern as speculative than for other interests. It takes strong technical knowledge to analyze a proposal for oil and gas, geothermal or mining development and evaluate the reasonable probability for production.

F. ARM'S LENGTH TRANSACTION

A transaction negotiated by unrelated parties, each acting in their own best interest is considered to be at arm's length.

G. UNIT RULE

Information regarding the unit rule is in Table T-2, taken directly from Uniform Appraisal Standards For Federal Acquisitions, 1992, p.39-42.

TABLE T-2. THE UNIT RULE TAKEN FROM UNIFORM APPRAISAL STANDARDS FOR FEDERAL LAND ACQUISITIONS, 1992, p. 39-42.

A-13. The unit rule: The fair market value concept which has been adopted by the courts to determine the just compensation required by the Constitution generally requires application of the so-called "unit rule," which is another principle designed to reflect the true situation in the market. This rule has two aspects:

First, the unit rule requires valuing property as a whole rather than by the sum of the values of the various interests into which it may have been carved, such as lessor and lessee, life tenant and remainderman, etc. This is an application of the principle that it is the property, not the various titles, which is being taken.¹¹³ Under this rule, the award for the whole is later apportioned among the claimants (lessor and lessee, life tenant and remainderman, etc.) as a second phase in the proceeding.¹¹⁴

Normally each parcel should be appraised separately. However, if two or more contiguous parcels are in the same identical ownership, an attempt should be made, in consultation with the client agency (or trial attorney, as appropriate), to resolve whether the parcels would more properly be appraised together as a unit.

If there are several interests or estates in the property, the property should be appraised as a whole, embracing the rights, estates and interests of all who may claim, and as if in one ownership. This is in keeping with the fact that it is the

¹¹³ The term "in rem" is used to designate proceedings or actions instituted against the thing, in contradistinction to personal actions, which are said to be in personam. Many cases are illustrative of this principle. E.g., United States v. Dunnington, 146 U.S. 338, 351 (1892); Bogart v. United States, 169 F.2d 210 (10th Cir. 1948); Nebraska v. United States, 164 F.2d 866, 868 (8th Cir. 1947), cert. denied, 334 U.S. 815; United States v. 25.936 Acres of Land in Borough of Edgewater, 153 F.2d 277, 279 (3rd Cir. 1946); Meadows v. United States, 144 F.2d 751, 752 (4th Cir. 1944).

¹¹⁴ State of Nebraska v. United States, 164 F.2d 866, 868 (8th Cir. 1947), cert. denied 334 U.S. 815; Texas v. Harris County Houston C.N. Dist., 158 F.2d 861, 865 (5th Cir. 1946); Silberman v. United States, 131 F.2d 715, 718 (1st Cir. 1942).

property itself--the thing--rather than the various titles to it which is being acquired.¹¹⁵

However, the condition of the title at the time of taking should be given full consideration, and if there exist estates or interests, such as easements, servitudes, or restrictions, which result in a diminution of the fair market value of the property as a whole, due allowance should be made for such factors.¹¹⁶ For example, land subject to an easement for public use for highway purposes generally would have no more than nominal market value,¹¹⁷ or land subject to an easement for light and air would have no highest and best use for building purposes and therefore it would have little market value for building purposes.

A very important exception to this aspect of the rule is to be borne in mind. Where the division in ownership has produced a division in use of such character as to destroy the practical unity of the property, the interests are separately valued at the outset. Examples are where buildings are owned by a tenant who has a right and duty to remove them at the end of his term¹¹⁸, or

¹¹⁵ However, the appraiser may be required by the agency to furnish separate valuations of the separate estates or interests for negotiation purposes.

¹¹⁶ Supporting citations and a further discussion in this respect appear *infra*, p. 41.

¹¹⁷ In this respect see Section A-21, *infra*, pp. 58-60.

¹¹⁸ As to the evaluation of buildings, structures and improvements owned by lessees, Section 302(b)(1)(2) of Public Law 91-646, approved January 2, 1971, 84 Stat. 1894, 1905, provides as follows:

(b)(1) For the purpose of determining the just compensation to be paid for any building, structure, or other improvement required to be acquired by subsection (a) of this section, such building, structure, or other improvement shall be deemed to be part of the real property to be acquired notwithstanding the right or obligation of a tenant, as against the owner of any other interest in the real property, to remove such building, structure, or improvement at the expiration of his term, and the fair market value which such building, structure, or improvement contributes to the fair market value of the real property to be acquired, or the fair market value of such building, structure, or improvement for removal from the real property, whichever is the greater, shall be paid to the

(continued...)

where an owner has given an easement of light and air.¹¹⁹ The "Constitution does not require a disregard of the mode of ownership."¹²⁰ However, unit (whole property) valuation is not precluded by a division in use which is due to the character of the property and is not caused by the division in ownership. Thus, unit valuation is ordinarily proper where ownership is divided between such inherently diverse interests as surface rights and timber,¹²¹ or mineral rights,¹²² but separate valuations may be necessary under special circumstances.¹²³

118 (...continued)
tenant therefor.

(2) Payment under this subsection shall not result in duplication of any payments otherwise authorized by law. No such payment shall be made unless the owner of the land involved disclaims all interest in the improvements of the tenant. In consideration of any such payment, the tenant shall assign, transfer, and release the United States all his rights, title, and interest in and to such improvements. Nothing in this subsection shall be construed to deprive the tenant of any rights to reject payment under this subsection and to obtain payment of such property interest in accordance with applicable law, other than this subsection.

These provisions have been construed in United States v. 40.00 Acres of Land, 427 F. Supp. 434 (W.D. MO. 1976).

See Almota Farmers Elevator and Warehouse Co. v. United States, 409 U.S. 470 (1973).

¹¹⁹ Boston Chamber of Commerce v. Boston, 217 U.S. 189, 195 (1910); Southern California Fisherman's Ass'n v. United States, 174 F.2d 739, 740 (9th Cir. 1949); Mayor and City Council of Baltimore v. United States, 147 F.2d 786, 789 (4th Cir. 1945); Messer v. United States, 157 F.2d 793, 795 (5th Cir. 1946).

¹²⁰ Boston Chamber of Commerce v. Boston, 217 U.S. 189, 195 (1910).

¹²¹ Meadows v. United States, 144 F.2d 751, 752 (4th Cir. 1944).

¹²² Eagle Lake Improvement Co. v. United States, 160 F.2d 182, 184 (5th Cir. 1947), cert. denied, 332 U.S. 762.

¹²³ United States v. Welch, 217 U.S. 333, 339 (1910); 11,000 Acres in Smith County, Tex. v. United States, 152 F.2d 566, 568 (5th Cir. 1945), cert. denied, 328 U.S. 835; United States v. Harrell, 133 F.2d 504, 508 (8th Cir. 1943); United States v. Certain Parcels of Land in Baltimore, 55 F. Supp. 257, 262-264 (D. Md. 1944). Application of these concepts in doubtful cases should be discussed with the attorney handling the particular case.

123 (...continued)

United States v. 91.90 Acres of Land, 586 F.2d 79, 87 (8th Cir. 1978), cert. denied, 441 U.S. 944 (1979); Morton Butler Timber Co. v. United States, 91 F.2d 884, 890-891 (6th Cir. 1937); United States v. Meyer, 113 F.2d 387, 397 (7th Cir. 1940), cert. denied 311 U.S. 706; United States v. Jaramillo, 190 F.2d 300, 302 (10th Cir. 1951); United States v. Certain Parcels of Land in Rapides Parish, La., 149 F.2d 81, 82 (5th Cir. 1945); Fain v. United States, 145 F.2d 956, 958 (6th Cir. 1944); Kinter v. United States, 156 F.2d 5, 7 (3rd Cir. 1946).

125 Art. I, Sec. 8, Clause 3.

It should be noted, however, that since unity of use is one of the elements for an integrated unit, it would not necessarily follow that a contiguous body of land in the same ownership constitutes a unit for valuation if the highest and best use for various parts are different. Failure to value the property as an integrated unit should, however, always be explained and supported.

The second aspect of the unit rule is that different elements of a tract of land are not to be separately valued and added together. For example, the value of timber is not added to a value for the house and thoeae, in turn, added to a value for the remainder of the property. The property is to be valued as a whole and its constituent parts considered only in the light of how they enhance or diminish the value of the whole, with care being exercised to avoid so-called "cumulative" appraisals.¹²⁴ This is a valid procedure because it is the entire unit which is being hypothetically sold, not the separate parts individually. If the appraiser is not familiar with all the types of property involved, he should consult with experts in the particular fields to familiarize himself with their methods so that he will be fully qualified to testify himself as to all items. In order to protect the record in these cases, it is important that the Government witnesses, who discuss separate elements in the property in their analyses, always clearly state that these were considered with respect to their enhancement of the value of the whole.

H. REGULATIONS, GUIDANCE, AND STANDARDS

Legal and regulatory guidance (including fees, rentals, and royalties) is found in Title 43, Code of Federal Regulations, under Minerals Management. Specifically:

| | |
|------|--|
| 2130 | Acquisition of Lands or Interests in Lands by Purchase or Condemnation |
| 2200 | Exchanges |
| 2720 | Conveyance of Federally - Owned Mineral Interests |
| 3000 | Minerals Management |
| 3100 | Oil and Gas Leasing |
| 3200 | Geothermal Resources Leasing |
| 3400 | Coal Management |
| 3500 | Solid Minerals Other than Coal |
| 3600 | Mineral Materials |
| 3700 | Multiple Use; Mining |
| 3800 | Mining Claims Under the General Mining Laws |

Appraisal guidance and standards are found in:

Uniform Appraisal Standards For Federal Acquisitions, 1992., Interagency Land Acquisition Conference, Washington, DC, p. 132.

Uniform Standards of Professional Appraisal Practice, updated as required, the Appraisal Foundation, Appraisal Standards Board.

II. MINERAL INTERESTS

A. MINERAL RIGHTS

Mineral rights may consist of ownership of mining claims, mill sites, leases, mineral material sales contracts, prospecting permits, private ownership of a privilege to extract minerals, and nongovernmental leases and contracts. These rights can have a FMV and allow a party to enter a parcel of land to explore and/or develop, remove, and sell (produce) mineral products. Fees, rents, and bonus bids are examples of governmental rights that can have a FMV attached to them.

FMV of mineral rights can be determined as an entity, but usually they are considered in relation with mineral royalty or mineral deposit FMV. An FMV determined independently of the mineral deposit does not reflect the total FMV of all mineral interests for a mineral deposit. An FMV for a Federal lease can be determined by making a DCF analysis using the rent payments for the term of the lease. Any bonus bids must also be included in the analysis. The California State Assessors' Handbook - Assessment of Mining Properties (3-97) on page 6-9 has the following statement regarding unpatented mining claims:

One valuation method the Board of Equalization's Staff has recommended over years is the capitalization of the recording fees

and rental fees (or assessment work) required by the federal government. These represent income to the land and are an indication of the minimum value that the claimant perceives the property to be worth; otherwise it would not be retained. The rental fee or value of assessment work should be capitalized into perpetuity, since there is not time limit on how long a claim can be held.

B. MINERAL ROYALTY

Sovereign ownership of land and minerals is typified by the Roman occupations and conquests. Minerals could be extracted by a selected few through permission of the emperor and/or his designee by payments of rent for the privilege. With passage of time in Europe, the concept that a King, Crown, or Sovereign (Royalty) owned all entities continued until the Renaissance period about the 15th century. Free miners then won a right to discover and claim mineral deposits. However, part of their production had to be paid to a Royalty. Therefore, royalty was a tax on mineral production paid to a Crown or the Church (Borne, 1989, p.1) Today, a royalty interest is one of an owner (lessor), and an operator's interest is that of one with a right, money, and the wherewithal to mine and sell a mineral. Both these interests are property and can be bought and sold.

Therefore, royalty means a payment to the owner of a mineral property as interest for the privilege of producing a mineral commodity from the owner's land. Also, there can be an up-front bonus type payment for this privilege. These payments and other stipulations are put forth in a written lease agreement. The privilege, without any bonus payment, is really reflected as part of the value of the extracted minerals sold and paid in money by a lessee to a lessor under agreed upon terms. Because of this concept, the lessee is entitled to depletion credit on his portion of the sold minerals and must pay income taxes on this royalty income. Lease agreements including royalty income can be sold and have a FMV. An overriding royalty is a retained royalty by a lessee when the property is subleased.

A FMV of a mineral royalty is often determined and put forth as a FMV of all mineral interests for a mineral deposit. Although easier to determine than a mineral deposit FMV, royalty FMV does not reflect the total FMV of all mineral interests for a mineral deposit.

C. MINERAL DEPOSITS

FMV of a mineral deposit at a given time is what that deposit is worth under a given set of legal, technical, and economic conditions. FMV of this interest usually is arrived at through an income approach to value (IAV) involving a conversion of projected future income discounted for time.

In short, the IAV is a method that converts capitalized future income into a FMV on the assumption that a mineral property is purchased for the future income it can

generate. It is here assumed that a purchaser would not be justified in paying more for the mineral property than the present value of the future income from the property; excluding any value for equipment, facilities, and good will in a government land exchange. Future income is less valuable than present day income because of the time value of money, risk involved (likelihood of receiving income), required discounted rate of return through business life, and the time period required for return of the original investment. Projected future earnings are a primary factor in determining the FMV of most mineral properties.

Gentry and O'Neil (1984, P.14) state:

... the preferred method for mining property valuation and the one unanimously used in commercial practice is the income approach.

Stermole (1996, p. 376) says:

Polls of industry presently indicate that DCFROR (Rate of return that makes the present worth (NPV) of + and - after tax cash flows equal to zero) is the number one economic evaluation decision method used by about two-thirds of industrial companies that use a formal economic evaluation procedure to evaluate the economic potential of investments.

Burmeister (1997, p. 383) indicates:

There is little doubt that DCF analysis, providing a NPV for each of a company's mining operations, is the most useful and effective valuation method as it combines both the short term parameters and the effective, or projected mine life.

Active mineral operations or projected future operations have value only because of the presence of reserves. Here, a single value is derived for reserves with the reasoning that all the costs for improvements, equipment, and any real and personal property used in the production of the reserves gives them value. If the reserves cannot be extracted at a profit, then there will be no future income and no profit. Therefore, the value of reserves on a property at a given time is the present value of all future discounted cash flows that come from owning the mineral property to be appraised. This does not mean that improvements, equipment, and so forth, have no value in themselves, but it does mean that sell-out (depreciated) value of them is not considered when appraising the value of reserves for say a Federal land exchange.

FMV of a mineral deposit can closely reflect the total FMV of a mineral interest. Usually, mineral rights FMV can be assumed in this FMV. Royalty should not be added to the FMV of a mineral deposit. In fact, it is a negative item in an IAV. A deposit owner-operator does not pay royalty. An owner who leases to another party

does receive royalty income, but that income does not reflect all of the value of the mineral deposit. Otherwise, the operator (lessee) would be working for nothing.

III. APPROACHES TO FMV OF MINERAL INTERESTS

A. FOUR APPROACHES TO FMV

1. PRIOR SALES APPROACH

A market approach considering prior sales of the mineral interests in question is the best approach. However, these sales seldom exist and the appraiser must try the next best approach, which is:

2. COMPARABLE SALES APPROACH

A market approach considering comparative sales of other similarly situated mineral interests. These types of sales are few and far between. Most mining operations are unique in regard to location, size, developability, access to markets, production rate, initial capital needed for production, and operating costs. Therefore an appraiser may then have to use the next best approach, which is:

3. INCOME APPROACH

An income approach to value can be applied to all three parts of mineral interests, but most of the time it would be applied to the mineral deposit (see II D).

a. Some Considerations

Consider first a proponent of a land exchange with an actual and permitted mineral operation doing business on, or adjacent to the property in question. The proponent may be mining on mining claims on the property, mining on privately owned land adjacent to the property, or possibly have a long term mineral material sales contract with the BLM. Key to this example is that the proponent has mineral rights to the exclusion of others. The best way to appraise this operation is for the proponent and not as if the property is on the open market. Therefore, consider sunk permitting costs and the capital cost situation for building and equipment items that already are in existence. In short, consider the whole situation at the time of appraisal, except for the sell-out value of existing items such as mining and processing equipment, already sunk capital costs, environmental, reclamation, and permitting costs, and so forth. Second, consider a property that is not developed and the proponent does not have mineral rights, or has not exercised his rights for development of the property, and no capital has been expended. The best way to appraise FMV here is as if the property was on the open market. Therefore, all permitting, environmental,

reclamation, and capital costs should be factored into the analysis. These costs as well as operating costs, market entry, amount and quality of reserves, percentage rate of return, tax structure, and so forth must be modeled up as well as possible by the appraiser. However, sell-out value of appropriate equipment is not considered. Third, consider that data not generated by an appraiser must be fully described, and in addition how that data was verified.

4. COST APPROACH

A final, and almost always inappropriate approach, is the cost approach to value. In this approach one must assume that the cost of all things necessary to explore for and/or produce a mineral is the FMV of the mineral interests. Seldom is this assumption true. These approaches will be discussed in more detail in Part IV of these Guidelines.

IV. DISCUSSION OF APPROACHES TO FMV OF MINERAL INTERESTS

A. MARKET APPROACHES

1. PRIOR SALES APPROACH

The best evidence of FMV is the prior sale of the identical mineral interests, reasonably recent, and at arm's length. Adjustments may have to be made to account for any conditions that have changed since the sale. Rarely does this situation occur.

2. COMPARABLE SALES APPROACH

Reasonably recent arm's length sales of mineral interests in the general area of the property in question provide the next best evidence of FMV. The sales must be comparable legally, technically, and economically to the subject mineral interest. If time has passed, or conditions are not exactly the same in the comparable sales, adjustments can possibly be made. In the case of mineral appraisals, except for mineral royalty, seldom can comparable sales be used properly. There are three main reasons for this. One is that there are very few sales of mineral deposits and/or rights. Two is that mineral interests are sold infrequently. Three is that there are few similar attributes among deposits. Most mineral deposits are unique in character with different size mineral bodies of different grade (reserves), different types of processing needs, different production rates, different market and sales areas, and so forth; all making it difficult to compare with one another. Often too many subjective adjustments and judgmental trade-offs must be made to arrive at a reasonable FMV.

a. Adjustments by use of comparative attributes

If comparable deposits exist, it is possible with market approaches to value to make adjustments by consideration of a series of attributes and arrive at FMV of the subject interest. With or without adjustments, the conditions of a comparative sale must be carefully investigated before it can be used as an indicator of FMV. See Table T-3A, and 3B..

b. Potentially serious problems with adjustments

Market approaches to value have several potentially serious problems.

- Many variables exist in a mineral operation that are not related to the quantity and quality of reserves. Therefore, deposits used for comparison should really be studied as thoroughly as the subject deposit so that any major differences that could affect value can be identified. Some of the variables are given below.
- Deposits that have produced for some time may not be properly compared with young, relatively underdeveloped, or nondeveloped deposits, particularly oil and gas deposits. Rate or potential rate of production is critical to consider in the comparison as well as product price and demand which can influence the production rate.
- Markets for produced products may not be similar.
- Production equipment may not be similar or of similar age and replacement capital can be of real concern.
- A buyer may not be knowledgeable of some important factors and pay more or less than a deposit is worth.
- In a competitive bid action one unrealistically high bid may establish an unrealistically high sales price.
- A buyer may have a special purpose in mind and pay more than a deposit is worth. An appraiser must be careful not to use conjectural or speculative evidence. A transaction must be at arms-length to be appropriate for comparison.

As can be seen from the above concepts, the most serious disadvantage in the comparable sales approach is the difficulty in accounting for unique characteristics between deposits that might be used for comparison. Nevertheless, the comparative sales method offers a technique for use of actual transactions in the market place for development of a FMV. It can be used effectively in certain situations.

J.R. EVANS
12-18-91

TABLE T-3.
COMPARATIVE MINERAL ATTRIBUTES FOR MINERAL INTEREST SALES.

SUMMARY OF COMPARATIVE SALES DATA ADJUSTED VALUES

| ATTRIBUTE | OPERATION | OPERATION |
|---|-----------|-----------|
| Dollar Value of Sale (\$) - If one exists | | |
| I. Date of Sale | 9 | 9 |
| II. Conditions of Sale | | |
| III. Ownership | | |
| IV. Distance to Primary Market | | |
| V. Accessibility | | |
| VI. Geologic and Geographic Settings | | |
| VII. Type of Deposit, Including Waste Factors | | |
| VIII. Type of Products Sold or That Can Be Sold | | |
| IX. Sales Prices (f.o.b.) for Finished Products | | |
| X. Production Rate and Annual Sales of Products | | |
| XI. Capital Cost Requirements | | |
| XII. Operating Costs | | |
| XIII. Mining, Reclamation, and Environmental Stips. | | |
| Total Adjustment (#) | | |
| Recommended FMV (\$) | | |

TABLE T-3 A

Attribute I - Date of Sale: When evaluating comparable sales data, care should be taken when gathering market data. The comparable sales must have occurred within a reasonable period of time of each other in order to maintain any degree of comparability. If there is a reasonable disparity, an adjustment can be made.

Attribute II - Conditions of Sale: Under this heading are considered such items as privilege of lease assignment, possible extension of lease and time periods involved, verbal lease, any built-in royalty rate increases and their style of increase, different royalty rates for different products, minimum royalty payments, how royalty payments are made, down payments, options to buy, competitive or non-competitive sales, up-front performance bond payments to insure royalty payments as diligence requirements on production, method of computing royalty payments, termination of lease statements, ability to place on-site plants and equipment, plant processing fees, only certain products that can be taken, time limits to remove stockpiles, equipment purchase options, and so forth.

Attribute III - Ownership: Refers to land and mineral ownerships, right of way purchase, mineral rights, and assignments: Federal, State, County administered land, private lands, split estate lands (surface and minerals estates), and assignments made to other parties that might make contract less than arm's length.

Attribute IV - Distance to Market: Factors to consider here are the location of market centers and haul distance to those centers in relation to the location of the deposit. Transportation costs, whether it be by haul trucks or unit trains, can significantly affect sales. Sales, F.O.B., are a main consideration here, but the purchasers must travel whatever distance to pick up materials and their costs are critical. Captive sales must also be considered, whereby the operation owner "sells" to himself, makes added value products such as asphaltic concrete aggregate or concrete in their own hot or batch plants and sell delivered on the job site. Also, where the mining site is some distance from the plant, haul costs to the plant and second handling must be considered.

Attribute V - Accessibility: Factors here center around the physical and legal access to mining sites and milling and processing plants. Rights of way, road types and conditions, distance of road required, land-locked conditions, and so forth, and are matters for consideration.

Attributes VI and VII Combined - Geologic and Geographic Setting and Type of Deposit, Including Waste Factor: Factors here to consider are the general geographic conditions such as elevation, topography (hills, valleys), climatic conditions, vegetation, and so forth. General geologic conditions involve stratigraphic and structural complexities, broad nature of rocks, as igneous intrusive, volcanic, sedimentary, metamorphic, and their interrelations to each other. Types of deposits include: residual (soil and gruss), slope wash, landslide, wind blow, river and creek, flood plain, terrace bench, beach, glacial, ancient river channel, and bedrock (hilltop, hillslope, massive, disseminated, ledge, vein, contact metasomatic,

bedded, magmatic segregation, pegmatite, residual, layered). Waste factors are given in percent of total waste material to total rock in the deposit and/or in percent of waste material to rock after entry into the milling and/or processing system. Several of the common types of waste are: soil, slope wash, coarse boulders from blasting underbreakage, fines, unusable rock that is interlayered or interfingering with good rock, slimes, wall rock, and untraced rock in heaps or tanks.

Attribute VIII - Type of products sold or that can be sold: Considered under this heading are listings of finished products available for sale in the market place or "sold" to the operator himself for further processing. If the operation is in the initial stages of development or temporarily shut down, then products that have been or could be sold should be considered.

Attribute IX - Sale Prices (F.O.B.) for Finished Products: Here the concern is for the F.O.B. sale prices of finished products at the first point of sale (before sale taxes, special discounts for large lots, trucking costs, added value costs such as bagging, and minimum load charges). If the operation is captive and the party "sells to themselves" at cost, a reasonable F.O.B. price must be determined by comparison with other nearby similar operations.

Attribute X - Production Rate and Annual Sales of Materials: Important factors to consider under the heading are history of production and sales, present production and sales, length of time the plant is run, and processing plant capacities (what is the rated capacity of the plant; could production be increased?, is production at less than capacity?). In short, is one operator able to produce much more than another, or much more for himself if the market, or other reasons warranted? Another factor is the size and amount of stockpiles of finished products. Where contracts are written for royalty payments for products sold across the scale stockpiled material is not paid for until sold. Nevertheless, stockpile inventories are important to note and account for at the termination of the contract.

Attribute XI - Capital Cost Requirements: Factors to be considered here are cost of various mining and milling equipment, plants, set up of plants (stationary), buildings, roads, power line installation, water development, working capital, and so forth. Exploration costs could be considered here. Consider also whether or not items are amortized and paid for by cash or borrowed money.

Attribute XII - Operating Costs: Items for consideration here are the costs associated with mining (and selective mining), blasting, milling and processing, transportation, and setting up of portable plants. These costs do not include the purchase price of equipment, but rather the labor involved in running the equipment (plus overhead), repair parts, maintenance in general, power and fuel costs, rental fees, plant processing fees (required by some land holders of those parties who have a plant on their land, but have a mining site on land owned by others), office supplies, training of employees, insurance, and so forth.

Attribute XIII - Mining, Reclamation, and Environmental Stipulations: Consider here the type of constraint and control given in contract stipulations, blasting permits, mining and reclamation plans, use permits, and land use zoning. Also important are requirements of FIR's and EIS's; environmental requirements in general, soil replacement, ree planting, fencing, and so forth, the need for water rights approval, waste water discharge requirements, sewage requirements, and health and safety requirements in general. Reclamation bonds, and specified equipment removal time at the end of contracts are important. In summary, most of these factors can be included under the general headings of contract stipulations, environmental controls, health and safety requirements, and water requirements.

B. COST APPROACH

This approach is based on the costs for land, mineral rights, equipment, exploration and development, marketing and permitting studies, road development, and so forth. In short, this approach assumes that the depreciated cost of things necessary to produce from a mineral deposit is the FMV of the mineral interests. Costs considered include purchase, transportation of item to site, and installation. For minerals, I do not know of any instance where this approach has been used on operating deposits, except for tax purposes in some states. It has been tried on underdeveloped and usually unexplored or barely explored ground.

On an operating mineral deposit depreciation must be calculated and deducted from the cost of existing improvements. Cost here means full economic cost (payments made to secure continued needs for production).

Depreciation is a term with two very different definitions. In the cost approach depreciation means a loss of value from any cause. Depreciation means the difference between present replacement cost and present value of an improvement. In contrast, "book value depreciation" is what is used by accountants and mineral appraisers in the income approach to FMV. The cost of investments that are deemed depreciable under State and Federal tax laws are allowed to be fully depreciated for full initial cost over set time limits as 3,5,7,10,15, or 20 year periods.

In the cost approach to FMV, depreciation represents a decrease in usability of capital improvements (utility) in two different ways:

- The remaining economic life of a property is shortened.
- There is a reduction in net benefits (efficiency).

Depreciation and value reduction results from three main elements:

- Physical deterioration with lowered utility (reduces value).
- Functional obsolescence that requires needed improvements or performance declines.
- Economic obsolescence that decreases the desirability of property through outside sources, such as environmental factors, overall employment shifts out of area, and so forth.

In real estate interests, appraisal costs often have a relationship to value, generally because the costs are for new improvements which increase the value of the property. This is not the situation with mineral interests. Most mineral interests are bought because the purchaser wants to receive timely income from them (some interests may be purchased as a tax write-off, and some operations may be bought and operated at a loss for a period of time in order to "break into" the market). How can capital costs for exploration and development contribute to NPV, or the immediate income stream? The answer is that for mineral interests these costs do not contribute directly to income and "value" and can be measured only through the income and not by the costs involved.

It is possible that a mineral interest may realize a large amount of income and a very high rate of return on the initial investment. More often, however, initial costs result in a zero net income and loss of capital investment by virtue of an uneconomic deposit or production well. After all, if the value that a mine generates or can generate does not exceed the costs needed to bring it into production, the venture cannot be economically viable.

The tenuous nature of the cost approach to value is clear. An appraiser can over, or under evaluate a mineral interest in grand fashion. This approach should not be used to appraise FMV of mineral interests.

C. INCOME APPROACH FOR ROYALTY PAYMENTS

This approach is based on actual, or assumed, royalty income from the mineral property in question over a specified time period. Appropriate allowance is made for depletion and taxes, and the cash flows are discounted at a specified percent rate of return over the time period. The royalty rate used could be in \$/ton or cubic yards, or as a percentage of the gross income. Inflation factors could be used in the analysis. Assumed royalty rate increases, with time, could be factored into the analysis.

A number of concepts must be assumed if one tries to use this approach. They are:

- That royalty income measures the FMV of all mineral interests adequately, is reflective of the value of the mineral reserves in the ground (which it does not), and can be used for all minerals.
- That there are adequate reserves to provide income over the time period considered, and that reserves could be profitably sold over the time period. In short, the economic viability of the property is justified. After all, if the property is not economically viable there will be no income -- royalty or otherwise.

- That the assumed rate of production over time is reasonably correct and in harmony with results of market entry studies, a particularly acute concept in nonmetallic minerals.
- That the depletion schedule and income tax rates used for royalty income are correct. If the production rate is wrong, then it will follow that the tax structure is wrong.

Lessors take depletion even if minerals were not extracted, and depletion is computed as though the minerals were removed. This latter credit must be figured for credit against future depletion when production of the mine resumes. If all minerals under the lease are not extracted, and a lease ended, lessors must adjust their capital account by restoring the depletion deduction taken in prior years for the mineral royalty payment credits taken in advance. This same amount must be reported as income.

- That an appropriate percentage rate of return (discount rate) is used, and an appropriate percentage rate of inflation, if used, is correct. That royalty increases used under an actual or an assumed lease agreement are reasonable and justified.
- That any comparable royalty rate used is reasonably determined by proper adjustments and is specified as to how it is fixed, sales across the scale, rock removed from place, or percentage of gross income. How the rate was determined must also be discussed; actual under lease, comparative with assumed lease, and others. Also, up-front payments or bonus bids for lease privileges must be accounted for. In the hard mineral industry, the payment is generally based on one-half of the expected annual production, and then worked off as production occurs. If an overriding royalty exists, it must be considered carefully. An overriding royalty is a retained royalty by a lessee when the property is subleased. If a property buyout privilege for the lessee exists it must also be considered.

Overall, the royalty income approach does not represent maximum future income that can be obtained from an economically viable mineral operation because only a portion of the production of reserves is considered. This approach has many problem areas in regard to input dates for analysis. Without economic viability analysis of the property in question this approach has no merit at all; no income, no royalty income. By the time an economic viability study is done there is enough data to prepare a DCF income analysis (IAV).

Even where a property is under lease, a royalty is being paid, and the property is up for sale, the royalty approach is not fully correct. The new owner, particularly if he was the former lessee, will now pay no royalty and clearly the property will be worth more than just the royalty payments. For the lessee, royalty payments are a cost of doing business and do not reflect income. If the new owner is not the former lessee and wishes to continue with the lessee, the

royalty payment does not reflect all the income that can be generated from the property. It seems unlikely that an owner would sell his property for just royalty income. It is possible for a party to sell his royalty interest as an entity. It becomes just that, the sale of royalty income discounted appropriately for time which represents only royalty income and not FMV of all mineral interests.

1. SOME GOVERNMENT GUIDANCE

Table T-4 shows guidance given in the 1992 Uniform appraisal standards. It seems to imply from the case histories of condemnation and taking cases that the royalty income approach is the only method to be used for the income approach to value. However, this implication is not correct and a mineral deposit (reserve) income approach can be used as long as it is not speculative.

As pointed out in Jack S. Foster, et. al v. the United States, 2 Cl.Ct. 426(1983) aff'd, 746 f.2d 1491 (Fed. Cir. 1984), cert. denied, 471 U.S. 1053 (1985) in a dolomite rock decision:

"just compensation" means the full monetary equivalent of that property; owner is to be put in the same position, from a monetary standpoint, as he would have been without the taking

At 427 the court said:

"Royalty interest" is an interest of a passive landowner-lessor or of an inactive lessee;" operator's interest" is the interest of a person with the right, the capital, and the ability to develop, produce, and sell the mineral; both are property rights which can be bought and sold.

At 448 the court said:

Both Federal and State courts recognize the royalty interest and the operator's interest as component parts of the whole mineral estate.

At 428 the court said:

The court (Court of Claims) also stated that "the value of plaintiff's entire mineral interest was, in the absence of comparable sales, the fair market value of the minerals in place on the date of taking."

TABLE T-4. Some government guidance on royalty income approach to value (from UNIFORM APPRAISAL STANDARDS FOR FEDERAL LAND ACQUISITIONS, 1992, p. 23-25).

Property having a highest and best use for mineral production may be appraised utilizing an income approach when comparable sales are lacking.⁵⁸ This is not an approach that should be utilized by an appraiser who is not thoroughly experienced in appraising mineral properties. Even when used by an appraiser experienced in this field, however, this is a highly speculative appraisal method and great care should be exercised in its use. As one court stated:

Great care must be taken, or such valuations can reach wonderland proportions. It is necessary to take into consideration manifold and varied factors like future supply and demand, economic conditions, estimates of mineral recoverability, the value of currency, changes in the marketplace, and technological advances. Many of these factors are impossible to predict with reasonable accuracy.⁵⁹

The appraisal of mineral property by the income approach is far too complex a subject to be adequately treated in these Standards; what is contained here on this subject is limited to a brief overview.

The income that may be capitalized is the royalty income, and not the income, or profit, generated by the business of mining and selling the mineral.⁶⁰ The basic, essential ingredients in a royalty income approach are (a) the royalty rate,⁶¹ (b) the unit sale price of the mineral to which the royalty rate is applied (e.g., \$20 per ton), (c) the projected annual amount of mineral unit production (e.g., 100,000 tons per year) (with the product of these three ingredients yielding the annual income), (d) the projected number of years of production and the year when the production will begin, and (e) the proper capitalization rate.

In estimating the income stream, the proper royalty rate can be derived from comparable mineral lease transactions, and the mineral unit price to which the royalty rate is applied may be derived from appropriate market transactions. The annual amount of production and the number of years of production are much more difficult to estimate and require as a minimum not only physical tests of the property to determine the quantity and quality of the mineral present, but also market studies to determine the volume and duration of the demand for the mineral in the subject property.⁶² (Numerous other factors may have to be considered, as, for example, the amount of overburden, the method of mining (e.g., surface or deep mining), the requirements of applicable reclamation laws, the hauling distance to market, competition from other sites, the size of the investment needed to construct any necessary processing plant, and so on.) Determination of the proper capitalization rate - always a critical element in an income approach - is a challenge as well.

⁵⁸ See e.g., U.S. v. 103.38 Acres of Land, 660 F.2d 208 (6th Cir. 1981), involving the valuation of a coal property. The court stated that "[a] 'comparable sales' analysis has long been - and remains - the preferred method of establishing a property's 'fair market value'," but added that "[i]n the absence of true 'comparables', however, the trier of fact may - indeed must - resort to other means of determining fair market value." *Id.* at 211. The court approved the use of a capitalization of royalty income method. See also U.S. v. 47.14 Acres of Land, 674 F.2d 722, 725 (8th Cir. 1982) (sand and gravel case).

⁵⁹ U.S. v. 47.14 Acres of Land, *supra*, at 726.

⁶⁰ E.g., U.S. v. 103.38 Acres of Land, *supra*, at 212-214; Cloverport Sand & Gravel Co., Inc. v. U.S., 6 Cl. Ct. 178, 191-194 (1984). The latter opinion, by the United States Claims Court, contains an excellent review of the law with respect to the valuation of mineral properties.

⁶¹ Royalties are generally expressed as a percent of sales realization, but are sometimes stated as a specified monetary amount per unit (e.g., 20 cents per ton).

⁶² In determining demand, no consideration can be given to the demand created by the very project for which the property is being acquired.

D. ROYALTY RATE DETERMINATION

1. GENERAL

Where appropriate to determine a royalty rate it is possible by use of comparable sales (other royalty rates) to adjust or develop a rate for a mineral property coming on stream. Use of the 13 attributes given in Table T-5 can lead to a new or revised royalty rate. This method is useful for determination of royalty rates for mineral material sales (43 CFR 3600). For an example of this analysis see Table T-5.

2. IN-PLACE AND ACROSS THE SCALES MEASUREMENTS

Some BLM staff have suggested that the BLM is required to measure materials by volume or weight equivalent in place and fix royalty on that basis. Their statement is not correct. At 43 CFR 3610.1-2(c) it says - "Mineral materials may be measured by in-place volume or weight equivalent." Note the word may in the quote. It is not required that the BLM sell in-place; it is optional. The best way to fix a royalty rate is by checking measured materials passing over weigh scales. An exception (to this way) is where materials are simple fill taken as is, in place, and there are no weigh scales.

a. In-Place Measurements

Advantages

- May have close monitoring of material moved from original in-place site with accurate accounting of yards removed by use of surveys.
- May have less royalty rate because of high waste factors.
- Where a single product such as fill is sold, there is no processing, or just simple screening, no scales, and a variety of sizes of trucks pick up material, in place measurement may be simple, cheap, and appropriate.
- Weigh scale, truck tally sheets, and financial record checking may not be necessary.

Disadvantages

- May be costly to monitor carefully and correctly. Requires field survey of some type, even if done in conjunction with air photos.

TABLE T-5. Mineral materials appraisal (sand & gravel)
for a competitive sale at the Indian Creek site,
Lake County, California.

Market Approach to Value (In-Place Basis)

Contract Considerations and Conditions

As this is a competitive sale we recommend that bidding should be by initial submission of written sealed bids, followed by oral auction bidding after the sealed bid opening. All conditions and stipulations of the contract should be made public in writing prior to/or at the same time the announcement of auction date is set through publication.

The following considerations and conditions are recommended in regard to the competitive mineral material contract for the sale of sand and gravel from the Indian Creek site:

- A. BLM Sales Contract Form 3600-5 (January 1984) be used (LD-APP-1, pp. 42-44) with the following attachments:
 1. Regulations at 43 CFR 3600 (LD-APP-2, pp. 45-48).
 2. Stipulations for mining, road construction, reclamation, and environmental and safety controls.
 3. Bond requirements (for reclamation and payment of royalty).
 4. Description of method for monitoring in-place volume of material removed from BLM administered land.
 5. Haul Truck Tally Sheet (p. 49) to be turned in monthly.
 6. Legal description and a map of the BLM administered land involved; 240 acres more or less.
- B. Mineral material should be specified as sand and gravel with the following conditions:
 1. Total in-place sale amount of 600,000 yd.³ more or less (Lange Brothers should be allowed to go to bench design).
 2. Minimum acceptable bid amount of \$0.40/yd.³, noting that this amount will be reappraised every 2-years from the date of the signed contract.
 3. Total minimum price for in-place material is \$240,000.
 4. Ten-year time period for extraction.
 5. Installment payments are \$24,000 each.
- C. Before operation can begin the successful bidder should be required to submit to the BLM the following items:
 1. An acceptable reclamation bond and a contract performance bond of 20% of the total contract price (\$48,000).
 2. Evidence of liability insurance.
 3. An approved mining and reclamation plan.
 4. An initial payment equivalent to two installment payments.
 5. A statement indicating that the BLM can inspect appropriate sales and other record data with 15 days notice.

There are two basic methods for the market approach to value for sales of material or royalty rate determination. The best method concerns prior and reasonably recent sales for materials from the same property, but no material has been sold from this property. Therefore, we consider the next best method, which is where there are comparable sales or rates, reasonably recent, from sand and gravel operations that are comparable technically and economically to the subject operation. With this method it is often possible to make adjustments to arrive at a fair market value for the sale or rate.

Three lease agreements were given to Evans by Lange Brothers during his visit to their office on January 24, 1986 (see Attachments D.E. and F). These are private contracts and for extraction of sand and gravel from Middle Creek some 30 road miles to the northwest (see M-1-2, p. 5). As of the date of this report these lease agreements are the only ones available to us.

Table T-APP-1 (p. 39 - developed by J.R. Evans and George DaBai, May 9, 1985) was used to test for comparability of the Quinn lease agreement (the most recent and still in force) with the subject sale and to make reasonable adjustments so as to obtain a fair market value for the subject sale.

The Stuart lease agreement was not used as it expired on September 1, 1984, and the Perea lease agreement was not used because only about 1,000 yds.³ are produced annually from the lease agreement site.

Under the Quinn lease agreement the Lange Brothers are paying at a rate of \$0.75/yd.³ for about 10,000 yds.³ of finished products taken from creek and creek area sand and gravel. Material is trucked to the Kelseyville plants of the Lange Brothers. The distance to Kelseyville from the Indian Creek site is about 10 miles further than from the Middle Creek areas to Kelseyville, however, there will probably be f.o.b. sales from the Indian Creek site. Also the Indian Creek site is much closer to the Middletown area (see M-1-2, p. 5). Lange Brothers will be in direct competition with Hidden Valley Sand and Gravel, Inc. who sell a variety of finished products, operate in the North Fork of Cache Creek, and have a plant and sales yard adjacent to the entry road from State Highway 20 to the Indian Creek site (see M-6-1, p. 22). Pickup for Lange Brothers will be at their plant site (see M-6-1, p. 22). Hidden Valley S.G., Inc., is operating under an old long term lease and they did not wish to make conditions of the contract public. They did say that their royalty rate was for finished products.

Lange Brothers, if successful bidder, will have a 10-year lease on BLM administered land and presumably ownership of the private land under their option to buy. Available yardage from both the BLM and private lands may be as much as 3,000,000 yards.

Creek mining will be less expensive than for the proposed subject operation. Environmental constraints are severe for creek mining and do cause mining costs to rise, however mining costs will be high for the Lange Brothers operation. Also, the Brothers will have capital expense outlay for purchase of the private land.

Not only will it be more expensive to mine the landslide area than to mine creek areas, but there is a significant amount of waste at the Indian Creek site. Clays will require strong washing for removal and proper tailings ponds for their retention as waste. Ponds will have to be emptied periodically. Also, over runs of sand will be required to produce a sufficient amount of coarse sizes for the finished products. This is true because of the overall relatively small size of coarse clasts in the conglomerate, and because of the abundance of "rotten" sandstone clasts that will crumble to sand, and/or clay on processing.

On consideration of these matters and a study of the data in Table T-APP-1 and Attachment 6, adjustments were made for each of the attributes. A total adjustment of -\$0.35/yd.³ was determined. Therefore, we find a rate of \$0.40 yd.³ to be the fair market value, and the minimum acceptable bid rate (subject to considerations and conditions mentioned on pages 41, and 50).

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MINERAL REPORT

Serial Number
CA-050-HMS-86-1

J. R. Evans

Prepared By:

J.R. Evans (RG 431; CEG 958), Senior Technical Minerals Specialist, and

Peter G. Milne, Geologist

(Title)

May 9, 1986

(Date)

| NUMBER | ATTRIBUTE | Number of Sale | 1/ | SUBJECT SALE |
|--|---|---|---------------------------------------|---|
| | | Name of Buyer & Seller, & Location of Property | 2 | |
| | | George P. Quire - Lessor to Lange Brothers, Parcel 9, Lake Co. Recorder's Plat Book 8 at pp. 1-3, ss of 6-13-79; Middle Crk., 7 mi. ± N. of Upper Lake, Lake Co. site adj. to Elk Mts. Rd. | | BLM lease to highest bidder at a competitive sale; Indian Creek area, 7 miles ± E. of Clear Lake Oaks, Lake Co. |
| | | Dollar value of sale (\$/yd., \$/Ton, \$/Ct) | \$0.75/yd. ³ or \$0.50/ton | \$0 |
| I | DATE OF SALE | Lease signed 7-1-85, ends 6-30-86 (1 yr.) | Adj. \$0.00 | 10-year lease to start in 3rd quarter, 1986. |
| II | CONDITIONS OF SALE | Lease cannot be assigned. Lease has possible 5-yr. extension, but will be renewed annually. Lessor can inspect lessee's records. Royalty payments on finished products w/in 30 days of material sales. Royalty rate increases possible, and based on overall price increases of finished products in Lake Co. Minimum annual payment of \$500.00 due annually on July 1 (min. royalty payment). | Adj. \$+0.05 | Competitive sale to highest bidder at BLM auction see 43 CFR 3600 (pp. 43-48, this report) and BLM Contract 3600-3 (pp. 42-44, this report) for details of conditions of sale. Two installment payments of 10% of sale price, plus bond needed to bid (see pp. 41, 49 this report). Allowance for 600,000 yds. ³ , or more to mine to bench design. Lease can be assigned. |
| III | OWNERSHIPS (PRIVATE SECTOR, GOVERNMENTAL AGENCY, SPLIT ESTATE) AND ASSIGNMENTS | Private surface and mineral estate. | Adj. \$+0.00 | Private and BLM-administered land; after extraction on BLM land under contract, mining will be entirely on private land. |
| IV | DISTANCE TO MARKET | Est. 12d yd. ³ site to 20 yd. ³ bottom dump trucks. 3.36 - 2.16 = 1.20 ÷ 2 = 60d; assign 1d for every 10d = 6d Material trucked from mine site to Lange Bros. processing, concrete and asphalt batch plants in Kelseyville (see M-1-2) about 18 miles. 18 mi x 20 yd. ³ x 12d/mi. = \$43.20 ÷ 20 = \$2.16/yd. ³ | Adj. \$-0.06 | About 28 miles to Kelseyville to Lange Brothers plants. Will have f.o.b. sales at site also. Assume 50% f.o.b., 50% shipped to Kelseyville. 20 mi x 20 yds. ³ x 12d yd. ³ /mi. = \$47.20 ÷ 20 = \$2.36/yd. ³ $50\% \times 2.36 = 1.18$ $50\% \times 2.16 = 1.08$ |
| V | ACCESSIBILITY | Readily accessible, adjacent to Elk Mts. Rd. | Adj. \$-0.02 | Access difficult, need 4-wheel drive. Will have to construct dirt haul roads and improve dirt access roads. Need to build bridge across S. Fork of Cache Creek and make improvements at Hwy 20 and access road intersection for truck traffic. |
| VI | GEOLOGIC AND GEOGRAPHIC SETTINGS | Middle Creek and banks along Middle Creek is area of general low relief. Creek replicates sand and gravel to an undetermined extent. | Adj. \$-0.03 | In hills underlain by soft sedimentary rocks of Cache Pk and is Indian Creek. Bedrock excavation site is across active landslide. Will have to mine through landslide scarp area also. Extensive SG materials. |
| VII | TYPE OF DEPOSIT, INCLUDING WASTE FACTOR | Streambed and bank deposit with <2% waste (by wt.) 2/25 = 1/13 ÷ 2 = 7 assign 1d for each 2% = 7d | Adj. \$-0.07 | Millstone, bedrock deposit and narrow stream bed and bank deposit. Waste factor 25% by wt. Overall cost least also relatively small; abund. flat clasts; "rotten" cgs. as clasts; clay-rich. Sale is for in-place material. |
| VIII | TYPE OF PRODUCTS SOLD OR THAT CAN BE SOLD | Concrete aggregate, road bases, asphaltic concrete aggr., drain rock, concrete sand. | Adj. \$0.00 | Concrete aggregate road bases, asphaltic concrete aggr., drain rock, concrete sand. |
| IX | SALE PRICES (F.O.B.) FOR PROCESSED MATERIAL (OR IN-PLACE MATERIAL) | f.o.b. prices for products about \$5.25/ton, finished, at Lange Brothers plants in Kelseyville. The price is \$7.88/yd. ³ . | Adj. \$0.00 | Coe. agg. 3/4" to 3/8" \$7.75/yd. ³ 1.4 tons/yd. ³ Pez grav. 3/8" to No. 4 \$7.75 " 1.3 to 1.5 Coe. ag. - No. 4 \$8.75 " 1.5 Info from Midden Rd. base (Cl. 11) 3/4" \$8.50 " 1.6 Valley Inc. Hwy Drain rock 1 1/4" to 3/4" \$7.75 " 1.4 20 SG plant - Coe. agg. size \$8.25 " 1.5 f.o.b. |
| X | PRODUCTION RATE AND ANNUAL SALES OF MATERIALS | 10,000 yds. ³ annually. 10,000/79,000 = 1/8 assign 1d per unit = 8d | Adj. \$0.08 | Estie. max. of 100,000 tons/yr. or at bedrock yds. (1.6 tons/yd. ³) need 63,000 yds. ³ , but w/25% waste factor need to mine 79,000 yds. ³ /yr. Will be deficiency of coarse clasts and will cause plant overruns to achieve cgs. also grading therefore will be surplus of sand. More raw material available. |
| XI | CAPITAL COST REQUIREMENTS | Minor; SG mined by loader, placed into 20 yd. ³ bottom dump trucks, and shipped to Kelseyville plants of Lange Brothers for final processing. Assign 5d for each major factor, i.e.: construct (1), land purchase (2), equip. (3) therefore, 3 x 5d = 15d | Adj. \$-0.15 | Need to purchase private lands which are under option-to-buy; need scrubber, and conveyor belt systems. May need impact crusher. Lange Brothers have some portable plant equipment. Have to build two tailings ponds; road construction; build creek bridge, and improve Hwy 20 access road intersection. |
| XII | OPERATING COSTS (MINING, PROCESSING, PLANT PROCESSING FEES, AND OTHER) | Actual costs not known, but crushing, screening, washing, and stockpiling done in Kelseyville plants. | Adj. \$-0.07 | Not known, but will need scrubber for clay, and probably impact crusher for flat particles. Costs will be higher, but partly balanced by f.o.b. sales of site, because no truck haul to Kelseyville for part of materials. |
| XIII | CONTINGENCIES (STIPULATIONS) OF SALE, REGARDING MINING, RECLAMATION, BONDING, HEALTH AND SAFETY, ACRES OF LAND AVAILABLE, USE PERMITS, RIGHTS-OF-WAY, AND OTHER | Lessor requires lessee to obtain use permit from Lake Co. Must maintain roads. Lessee can construct portable buildings and equipment. All equipment, etc. to be removed w/in 30 days of termination of lease. No bond. Lessee must maintain liability insurance. | Adj. \$-0.10 | Mine and reclamation plan must be approved by BLM. Must follow 43 CFR 3600 regulations. Monitoring for yds. ³ mined set up by BLM which DO (in-place sale) see pp. 1, 2 in text. Need liability insur. Need appropriate rt. from CA St. Water Rts. Bd. to take water from lake. |
| J&L & CSD 3-9-86 | | TOTAL ADJUSTMENT | -8-0.35 | DATE: May 9, 1986 |
| 1/ See Attachment B 2/ See Attachment C | | ADJUSTED RATE | \$0.40 | Sr. Tech. Mta. Spec. NAME AND TITLE: J.B. Evans (RC 431, CEC 958) |

TABLE T-5 B

LANDS INVOLVED

Mount Diablo Base and Meridian
T. 14 N., R. 6 W.,
Section 32, SW¼
and
T. 13 N., R. 6 W.,
Section 5, NW¼
Containing 240.00 Acres

MINERAL MATERIALS APPRAISAL (SAND AND GRAVEL)

FOR A COMPETITIVE SALE AT

THE INDIAN CREEK SITE,

LAKE COUNTY, CALIFORNIA

- Royalty payment made for stripped and waste materials; possibly at lower rate. Tabulating material removed but not sold counts against royalty payment credits by applicant. This may hurt the cash flow if material sits in the yard for long periods of time.
- Some material moved from original site but still in extraction area may cause problems with yards removed calculations if the material is not properly surveyed.
- Same royalty is paid for low-priced fill as for higher-priced asphalt and concrete aggregate, a significant and improper discrepancy.

b. Across the Scales Measurements

Advantages

- A more proper and fair royalty rate appraisal may be made; accounting for the different sales prices of different first point of sale products.
- No payments required for stripping and waste material.
- Monitoring easier, because weigh sales tickets and truck tally sheets are required and can be checked periodically.
- Cash flow not influenced by royalty payments in advance of sales.

Disadvantages

- May be difficult to monitor properly if adequate controls and checks are lacking. Periodic field checks are necessary.
- Should have higher royalty rate.
- If minimum monthly, or periodic royalty payment is not required, land holder may have to wait for sales of product by lessee.
- Minor risk of trucks bypassing scales to haul material to lessee owned plants, or stockpiles.

3. PRODUCTION VERIFICATION

Regardless of the type of appraisal used, production verification can be implemented by checking sales receipts, monthly sales summaries, tax records, and insisting on regular submission of Haul Truck Tally Sheets (see Table T-6).

TABLE T-6.

HAUL TRUCK TALLY SHEET

Contract # _____ Date _____

Name of Mineral Operation _____

Location of Mineral Operation _____

Mineral Commodity _____

Truck Type and Capacity in Cubic Yards _____

License Number _____

Ticket Number _____

Start Time _____

Stop Time _____

Down Time _____

Hours Worked _____

Tons or Yards Loaded (specify) _____

Driver's Company _____

Driver's Signature _____

Comments _____

JRE 9-89

For operations selling several finished products with different f.o.b. prices and a significant waste factor, the appraisal and production verification should be through f.o.b. sales, usually in tons.

For any in-place appraisal a monitoring scheme for production must be worked out in advance of the lease or sale and adhered to. For soft "running" material, very small sales of material, and replenishing stream or river bed deposits, in-place appraisals are not appropriate because production verification becomes untenable. It is here emphasized that in most situations, even in stone quarries, rough visual estimates of volume removed is not sufficient for production verification.

4. RATE BOOKS AND AREA WIDE APPRAISALS

Some BLM offices have developed what has become known as rate books for making comparative sales (royalty rate determination) for Mineral Material Sales (43 CFR 3600). These books are usually developed after making what is called an area wide appraisal. The area wide appraisal involves compiling royalty rate (sales) data available to the BLM, by mineral commodity, and placing them in a rate book. Rates are reviewed periodically for rate changes.

Advantages

- Rapid
- Low Cost per appraisal
- Can be done by nearly anyone
- Suitable for small areas where similar technical and economic conditions exist (i.e., community pits, common use areas).
- May be suitable for a few years.

Disadvantages

- High initial cost in time and money to set up books (data gathering) if used for other than very small areas.
- Can result in improper appraisals because of lack of enough information and interpretation by non-mineral appraiser.
- May be unsuitable in large complex market areas and in various market areas in a region.

- Unsuitable where a variety of products in a variety of tonnage are sold at a wide range of f.o.b. prices.
- Unsuitable where a high local competitive bid is received for a mineral sale.
- Generally does not distinguish between in-place and f.o.b. royalty rates (sales).
- Some material moved from original site but still in extraction area may cause problems with yards removed calculations if the material is not properly surveyed.
- Same royalty is paid for low-priced fill as for higher-priced asphalt and concrete aggregate, a significant and improper discrepancy.

E. INCOME APPROACH FOR MINERAL RESERVES

1. BASIC CONCEPTS

In this approach income is converted into an estimate of value through economic analysis by means of cash flow (CF) or discounted cash flow (DCF) modeling. The basic assumption is that a mineral deposit is purchased for the money income it will produce. That money is available for developing the deposit cannot be automatically assumed and financial analyses may be necessary. There are several basic concepts used in the income approach and are as follows:

- Capitalized future income is converted to value based on the assumption that a mineral deposit is, or can be, extracted for the future income it will generate.
- Future income is less valuable than present day income, because of the time value of money, risk involved (likelihood of receiving income), required discounted rate of return through project life years, and the time period for return of the original investment.

In this approach, the duration and quantity of income must be estimated. If the mineral deposit has been in production for several years and the only time period of evaluation is the present, it is necessary to enter in with the analysis as best as possible at the start of the present time period. For economic evaluations for past time periods a mineral appraiser has a difficult task, and must do the best they can with historical, technical, and economic data.

- Mineral deposits have real value only because of the presence of reserves. It is true, that all costs for improvements, reclamation, equipment, and real and personal property used for the production of reserves must be balanced against income. But, if a mineral cannot be extracted at a profit, there will be insufficient future income and no value.

It is not here implied that improvements, equipment and so forth, have no value in themselves, but rather that their sell out (depreciated) value is not considered in determining the value of the reserves.

The CF or DCF analysis is based on the economic viability of the mineral operation and how much the mineral reserves are worth at a given time under given legal, technical, economic and market conditions.

- Projected future annually escalated earnings, with an appropriate discount rate over the determined project life years (PLY) to determine the after tax net present value (NPV) is to be used. If the NPV is positive, then the mineral operation will earn a higher percentage rate of return than the discount rate indicates; if negative, the mineral operation will earn less; if zero, the earning equals the rate of return. After any risk adjustments, the NPV is the basis for determining the FMV.
- DCF analyses should not be for more than about 20 years of productive operation life and are adopted, insofar as possible, to the actual systems used by mineral operations. If a deposit is not developed, usually one to three years of lead time to production is adopted. To carry an economic analysis for more than 20 years of productive life, even though reserves may have a greater life at the projected rate of production, is not generally tenable. The 20 year future value of a dollar today, at 15%, is only about \$0.06. In addition, risk factors, adequacy of escalation rates and the discount rate used are already stretched at 20 years of life. Finally, there is no minimum rate of return or NPV specified by law or regulation.
- Appropriate tax framework must be used in the DCF analysis. Many actual, or proposed mineral operations that do, or could operate on Federal lands are large corporate ventures requiring the use of corporate tax frameworks, rather than individual tax frameworks.

Consideration should be given to expensed (deducted fully in year incurred) and capitalized (not taken in year incurred and over more than one year) costs, loan interest, amortization concepts and any loss carried forward. Some reproduction costs may have to be sunk. Most of the time, the value of depreciable cost items are recovered by using the Modified Accelerated Cost Recovery System (ACRS), based on a seven (7) year property.

Depletion allowance benefits are usually recovered by percentage depletion at the appropriate percent of net revenue from commodity sales. Of course, the deduction for depletion cannot exceed 50 percent of the taxable income after all deductions, except depletion and deduction for net operating loss carried forward. Where depletion allowance exceeds the 50 percent limit, the 50 percent limit figure is usually used in computation of taxable income.

State and/or county tax frameworks vary and must be accounted for adequately. For example, California property taxes are ad valorem (at value), making an actual figure impossible to use as an input to the DCF, unless actual data from company records can be used. Therefore, it is reasonable to estimate these taxes at one percent of the net revenue on an annual basis. Where an operation is ongoing, the actual tax framework elements should be used to help determine value. Where there is no operation, but one is feasible, the mineral examiner should generally use full rates in consideration of tax framework items. A FMV determination on mineral operations before taxes is improper. The tax framework is of major importance and must be considered fully, because it can drive an apparent profitable operation into one with a negative cash flow.

2. USE OF A DCF MODEL FOR ANALYSIS

Properly determined input data and considerations must be used and/or verified, and placed in an appropriate economic model to make the income approach to value realistic. If there are no facilities developed adjacent to the mineral deposit, then inputs must be developed from scratch using Mining Cost Service, trade magazines, technical, economic, industrial, and tax literature, and, most importantly, the mineral appraisers experience. If an ongoing operation exists, then most information can be verified by checking statements, purchases, reserves (grade and tonnage), production, costs, income, taxes, and other financial records, as appropriate. Where data cannot be verified, or verified only in part, the appraiser must determine inputs and go on with the analysis.

Depending on the complexity of the deposit or the mining operation occurring or projected, information that is to be used in the economic analysis of the deposit may be acquired from a proponent and/or acquired through field investigation of the property. Any information acquired from a potential or actual operator must be verified to assure its application and acceptance in the economic analysis.

It may be necessary for an operator to provide specific information or analyses that may be requested by the mineral appraiser to independently verify data. In large operations, the complexity of data supporting reserve estimation, pit design, and mining feasibility provides small opportunity for "fixing" or "rigging" data. Correlating known pieces of information from the data allow a check for verification purposes. For large bulk disseminated gold deposits, company data may be required to correlate the exploration reserve grade model, production records, and blast hole model. For small mines, verification of data usually rests with the mineral appraiser's sampling testing, and modeling.

It is important that the mineral appraiser analyze and describe the deposit grade and tonnage from data acquired during the examination of the property. Verification of this data should be discussed in the report, including which method of verification was used, confidence of the examiners verification data, and whether the information obtained by the proponent is acceptable to be used in the economic analysis of the deposit.

The discussion should focus on the data acquired by the mineral appraiser, and how it correlates with information on the property provided by the proponent. For large disseminated gold operations, comparison of drill hole data, deposit grade and tonnage model(s), and production logs or reports can be used to verify the acceptance of the technical and economic data provided to the appraiser. This information may be included as attachments to the report. Illustrations should show examples of deposit grade and tonnage models, drill hole grade calculations, and pit design. All this information should be used to correlate grade and tonnage figures for acceptance in the economic analysis.

Discuss any variance in data, and include a discussion on which data will be considered by the examiner and, why other data provided by the proponent will not be considered in the mineral appraisal.

Also, include a discussion of certain data that cannot be totally verified and must be accepted as provided. This includes specific proprietary operating costs, associated feasibility studies, tax allowances, deductions and credits, and other information. If verification cannot be made, the report must address these issues. Discuss the effect the data may have on your conclusions if the data is not used. Also, discuss any data that is inaccurate, dated, or incorrect.

Present the data and analyses in a logical and structured way before use in the DCF model. Use projected future annual escalated earnings with an appropriate discount rate over the determined operational life in years to find the after tax net present value (NPV). Appropriate tables and graphs must be presented.

All assumptions and concepts, and data in regard to input items used in the analyses must be explained. The main elements of concern for analyses are:

- Mineral commodity uses
- Market and market entry studies
- Rate of production, grade, and recovery factors over time of analysis based on tonnage and grade factors, market entry, and waste factors.
- Selling prices of products (f.o.b), escalated
- Gross and net revenues
- Operating costs, escalated
- Exploration and development costs.
- Depreciable, nondepreciable, and working capital costs (including reclamation and environmental costs), escalated.
- Tax elements (corporate or individual), such as, State or County income tax, Federal income tax, loan interest, depreciation, depletion, and amortization.
- Net incomes
- Operating cash flows
- Salvage value
- Cash flows
- Escalation rates used (general inflation rate should not be use).
- Discount rate used
- Net Present Value (NPV)
- Risk factor

Table T-7A-7B shows a DCF model format developed by J. R. Evans and R. W. Waiwood.

| LINE | FUNC | ITEM | UNIT | SYMBOL | ESCAL FTR (%) | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|------|------|---|-----------------|----------|---------------|--------|--------|---------|---------|---------|---------|---------|
| 1 | | Product Mined I (sand and gravel) | tons | PM(I) | | | | | | | | |
| 2 | x | Grade I | oz/ton | G(I) | | | | | | | | |
| 3 | x | Recovery Rate I | % | RR(I) | | | | | | | | |
| 4 | = | Recovered Mineral I | tons, oz, lb | RM(I) | | | | | | | | |
| 5 | x | Selling Price I | \$/tons, oz, lb | SP(I) | 2.00 % | \$3.60 | \$3.87 | \$3.75 | \$3.82 | \$3.90 | \$3.97 | \$4.05 |
| 6 | = | Gross Revenue I | \$ | GR(I) | | 0 | 0 | 1897500 | 2047520 | 2080400 | 2127920 | 2170800 |
| 7 | | Product Mined II | tons | PM(II) | | | | | | | | |
| 8 | x | Grade II | oz/ton | G(II) | | | | | | | | |
| 9 | x | Recovery Rate II | % | RR(II) | | | | | | | | |
| 10 | = | Recovered Mineral II | tons, oz, lb | RM(II) | | | | | | | | |
| 11 | x | Selling Price II | \$/tons, oz, lb | SP(II) | | | | | | | | |
| 12 | = | Gross Revenue II | \$ | GR(II) | | | | | | | | |
| 13 | | Royalty Rate I | % | RoyR(I) | | | | | | | | |
| 14 | x | PM(I) or GR(I) | \$ / unit | | | | | | | | | |
| 15 | = | Royalty Payment I | \$ | RP(I) | | | | | | | | |
| 16 | | Royalty Rate II | % | RoyR(II) | | | | | | | | |
| 17 | x | PM(II) or GR(II) | \$ / unit | | | | | | | | | |
| 18 | = | Royalty Payment II | \$ | RP(II) | | | | | | | | |
| 19 | | Gross Revenue (GR(I) + GR(II)) | \$ | GR | | | | | | | | |
| 20 | = | Royalty Payment I | \$ | RP(I) | | | | | | | | |
| 21 | = | Royalty Payment II | \$ | RP(II) | | | | | | | | |
| 22 | = | Net Revenue | \$ | NR | | | | | | | | |
| 23 | | Operating Costs Per Unit | \$/ton | OCU | 2.50 % | \$2.70 | \$2.77 | \$2.84 | \$2.91 | \$2.98 | \$3.05 | \$3.13 |
| 24 | x | Product Mined (Total Mine Production) | tons | PMT | | | | | | | | |
| 25 | = | Operating Costs | \$ | OC | | | | | | | | |
| 26 | | Net Revenue | \$ | NR | | | | | | | | |
| 27 | = | Operating Costs | \$ | OC | | | | | | | | |
| 28 | = | Exploration Costs | \$ | EC | | | | | | | | |
| 29 | = | Development Costs | \$ | DC | | | | | | | | |
| 30 | = | Depreciation | \$ | DPR | | | | | | | | |
| 31 | = | Amortization | \$ | AM | | | | | | | | |
| 32 | = | Interest on Loan | \$ | I | | | | | | | | |
| 33 | = | California Prop Tax (1% of NR) | \$ | CPTX | | | | | | | | |
| 34 | = | Taxable Income Before Depletion | \$ | TXBD | | | | | | | | |
| 35 | = | 50% Limit on Depletion | \$ | 50%L | | | | | | | | |
| 36 | = | Depletion Rate @ 5 % | % | %DPL | | | | | | | | |
| 37 | = | Depletion (5 % x NR) | \$ | DPL | | | | | | | | |
| 38 | = | Taxable Inc. after Depletion | \$ | TXAD | | | | | | | | |
| 39 | = | Net Oper. Loss Carry Fwd | \$ | NOLCF | | | | | | | | |
| 40 | = | Taxable Income | \$ | TXI | | | | | | | | |
| 41 | = | State & Fed Tax 40.14 % | \$ | TX | | | | | | | | |
| 42 | = | Net Income | \$ | NI | | | | | | | | |
| 43 | = | Exploration Costs | \$ | EC | | | | | | | | |
| 44 | = | Development Costs | \$ | DC | | | | | | | | |
| 45 | = | Depreciation | \$ | DP | | | | | | | | |
| 46 | = | Amortization | \$ | AM | | | | | | | | |
| 47 | = | Depletion | \$ | DPL | | | | | | | | |
| 48 | = | Interest on Loan | \$ | I | | | | | | | | |
| 49 | = | Working Capital Costs Returned | \$ | WCCR | | | | | | | | |
| 50 | = | Net Oper. Loss Carry Fwd | \$ | NOLCF | | | | | | | | |
| 51 | = | Operating Cash Flow | \$ | OCF | | | | | | | | |
| 52 | = | Salvage Value | \$ | SV | | | | | | | | |
| 53 | = | Working Capital Costs | \$ | WCC | | | | | | | | |
| 54 | = | Nondeprec Capital Costs | \$ | NDC | | | | | | | | |
| 55 | = | Depreciable Capital Costs | \$ | DCC | | | | | | | | |
| 56 | = | Mineral Acquisition Costs and/or RP Buyouts | \$ | MAC | | | | | | | | |
| 57 | = | Interest on Loan | \$ | I | | | | | | | | |
| 58 | = | Cash Flow | \$ | CF | | | | | | | | |
| 59 | = | Discount Rate Factor @ 10 % (End of Year) | Decimal | DRF | | | | | | | | |
| 60 | = | Discounted Cash Flow | \$ | DCF | | | | | | | | |
| 61 | = | Cumulative DCF | \$ | CDCF | | | | | | | | |

3. TECHNICAL CONSIDERATIONS FOR DCF MODEL

a. Land Status, Use and Access

Data must be assembled and carefully studied to make sure of any limitations and problems that would influence the appraisal (no permission to extract minerals, no or limited access, and so forth).

On Federal lands where legal descriptions may be by section, township and range, parcels can be difficult to locate in the field. Mining claims, leases, prospecting permits, rights-of-way, split-estates, withdrawals for certain special uses, environmental restrictions, community pits, or common use areas, adjacent federal and private land boundaries, and so forth are cause for real concern. These data are the first to check in any mineral appraisal as they can profoundly affect the process by virtue of an outside party having a valid existing right on the subject land in question. Also, status must be checked closely on private lands adjacent to Federal lands to be exchanged because they may be zoned so that no mineral operation would be permissible on the exchange.

BLM maps and records, county assessors plat books and ownership data should be checked and copies made of appropriate documents and maps. Existing mineral rights may hold up or prevent certain mineral estate exchanges, conveyances, and "sales" of mineral materials under 43 CFR 3600.

b. Physical Features and Improvements

These topics need to be analyzed to see if the mineral operation or mineral property might have limitations for development. A rugged and remote undeveloped brush covered mineral property with no nearby water and power facilities will involve significant and specific costs to bring it into production.

c. Geology and Mineral Deposits

Pertinent aspects of regional and site specific geology, structural geology, and mineral deposits must be noted and carefully analyzed. These features are critical to any mineral interest appraisal and must be developed and/or analyzed by a knowledgeable mineral appraiser.

d. Reserves

Simply put reserves are the measurable amount of suitable grade minerals (including oil and gas, and geothermal steam) that can be extracted at a profit. Calculation of the quality and quantity of reserves are critical data for a mineral appraisal. A professional petroleum geologist/engineer and/or

a mining geologist/engineer is needed to handle the aspects involved with reserve calculations or to review the calculations of others. Make sure all terms used in regard to tonnage and grade of reserves are clearly defined. Average grade, cutoff grade, sample area influence, and so forth are examples of critical terms.

Because methods used to present tonnage and grade models will vary with different types of deposits. Ensure that all units of measure are shown in computations, tables, and illustrations when compiling grade and tonnage information. This provides a calculation check for the reader and helps to integrate the information with other parts of the report.

Ensure that all units of measure are compatible with accepted industry practice for the type of deposit under investigation. For example, units of grade for lode gold deposits should be in troy ounces per ton, instead of percent; units of grade for placer gold deposits should be in dollars per cubic yard, instead of dollars per ton; and so forth.

Fully describe the methods and models used to determine grade and tonnage, and mining blocks. Illustrations should be used, so the reader can easily see the distribution of different grades within the deposit. Geology and other maps and cross-sections, should be used to illustrate the locations of sample and/or drill sites and the amount of influence of each site. Use tables, complete with full titles and accurate sample numbers, to show grade calculations and tonnage or volume assigned to blocks of influence. Use additional maps and sections to illustrate the distribution of material of different quality in the deposit as a whole.

e. Waste Factors and Recoverable Material

Actual and projected tons and grade of material are entered for each project life year (PLY) of production. The recovered material is key and reflects the sales product after the recovery (waste) factor is applied. Production rate and production time are based on market entry (share), amount of reserves, and waste factor. The mineral appraiser must determine to the best of their ability how much the recovered material is entering, and can in the future enter the market place for sale. If the commodity is gold, the assumption is you can sell all you can produce. If the commodity is say, carbonate rock, all that can be sold annually by individual use must be determined through a study of past production records and/or a market entry study based on product specifications, demand, and market share. Future sales can be documented through contracts or letters of agreement assuring future purchases. With no contracts or agreements, a mineral appraiser is left to their own initiative to decide on market entry possibilities.

4. MARKET AND MARKETABILITY CONSIDERATIONS FOR DCF MODEL

Marketability is the ability of a mineral product to enter a market place for sale. The appraiser should describe the factors that affects the ability of the mineral products that are, or can be sold in a market place. Each product's use should be described. Minerals can occur either as small percentages of the rock in place, such as metallic minerals, or as minerals which comprise the bulk of the rock in place, such as most industrial minerals. High price commodities, such as precious and other metals, generally do not compete for market shares and, therefore, do not require a marketability analysis. Market entry is assumed. However, a market entry study is usually required for nonmetallic minerals, because strong competition is required for a market share.

Because of the significant difference between metal and nonmetal markets a few broad concepts for consideration are given below:

For metals:

- Valuable material may be only a percent or less of total material mined.
- Usually much more capital money is required for the sophisticated mining and processing equipment needed.
- Usually operating costs are higher.
- Deposit can be remote from marketplace and still be economically viable.
- Analytical testing mainly for metal content; relatively cheap; many labs available to do testing.
- Transportation costs for processed or refined metals are a very small part of the sales price.
- Sales price is quite high compared to nonmetals.
- All metal produced can usually be sold.

For nonmetals:

- Valuable material is the bulk of material mined.
- Usually less capital money required for mining and processing equipment than for metals.
- Operating costs are usually lower than for metals.
- Analytical testing for chemical and physical properties is involved; relatively expensive; few labs available to do testing. Some tests that are usually required are:

Color
Brightness
PH
CaCO₃
H₂O content

Porosity
Permeability
Absorption
Adsorption
Bulk density

- Deposits are mostly close to the marketplace so as to be economically viable.

- Transportation costs are usually a significant part of the sales price of processed materials. Bulk f.o.b. sales can be made and transportation costs are then negligible.
- Sales price is almost always quite low compared to metal prices.
- In contrast to metals a highly competitive marketplace has to be entered. This is no guarantee that processed material can be sold. A seller may have to literally take away business from a competitor through several means:
 1. Produce a superior quality product in terms of physical and chemical characteristics.
 2. Produce and process a wider variety of quality, and even new, end products.
 3. Provide better overall service; more timely delivery of product, better salesmanship, management innovation, more highly trained staff.
 4. Provide lower sales prices of end product through efficiency in reducing capital and operating costs, energy costs, and environmental costs.
 5. Provide more sales potential with larger and innovative processing plants.

The following topics must be considered in a marketability analysis:

a. Market Area

The market area is of real concern as it refers to that general area in which the mineral commodity can be sold. For example, gold and petroleum can have worldwide markets. However, sand and gravel operations may have a market area with a radius of 10 to 25 miles.

Data should be presented in map or plat form, showing the areal limits of the market area. If the market area is large, or undefined, the description of the general area should be given in narrative format. The description should include the farthest sale point and the area where most of the commodity is sold.

b. Selling Price

Selling price of an individual commodity such as gold, or the weighted average selling price of a group of related commodities, such as aggregates produced from the same plant, must be confirmed for an actual operation, or determined for a proposed operation (Tables T-8, T-9 and T-10). The unit of time is generally one year. Selling prices are determined as F.O.B., or Freight on Board, meaning here the first possible point of sale price without any value added items such as transportation or packaging. For example, the selling price of processed concrete sand is determined as that

price charged to a customer leaving the plant yard and assessed across a weigh scale, not the price of concrete sand delivered 10 miles away or as mixed in concrete with cement and other aggregates. Selling prices should be escalated on an annual basis.

Where a variety of mineral commodities are to be sold at the same plant at quite different F.O.B. prices, a weighted average selling price (assuming equal sale amounts) can be approximated by use of the geometric mean formula (GM).

$GM = \sqrt[N]{A+B+C\dots}$ A,B,C, equal different products at their f.o.b. list prices (\$)

N = number of different prices

With this formula an appraiser calculates equal sales amounts of all products. Remember, it is an approximation.

c. Product Specifications

Mineral products require specific specifications in order to be sold into a market. Even gold must be 99.9% pure. Nonmetallic minerals can be very difficult in regard to both physical and chemical specifications. For example, limestone may be sold as fillers, extenders, whiteners, cement admixture, and into chemical products. Limestone for these uses must meet ridged requirements. Not all limestone can. If it can, then beneficiation costs and market share plus the price of the finished product are critical to a marketability analysis. The mineral appraiser must check into product specifications thoroughly and carefully, particularly for nonmetallic minerals.

AVERAGE MONTHLY & YEARLY GOLD PRICES WITH PERCENTAGE FROM PREVIOUS YEAR
(Handy & Harman Quote in dollars per troy ounce)

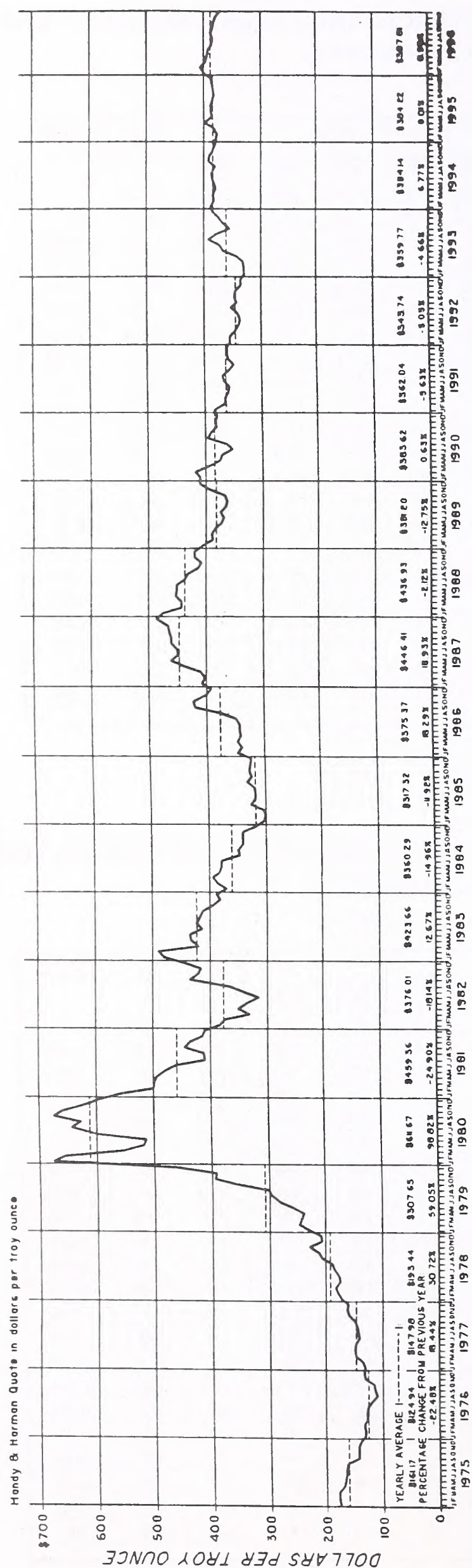
| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | YEARLY AVG. | % CHANGE PRIOR YR |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------------|----------------------|
| 1975 | 176.52 | 179.75 | 178.28 | 169.85 | 167.41 | 164.35 | 165.34 | 163.18 | 143.76 | 143.00 | 143.01 | 139.50 | 161.16 | |
| 1976 | 131.19 | 131.21 | 132.74 | 128.02 | 127.06 | 125.75 | 117.62 | 109.82 | 114.35 | 116.48 | 131.07 | 133.96 | 124.94 | -22.48% |
| 1977 | 132.52 | 136.27 | 148.29 | 149.25 | 146.80 | 141.10 | 143.63 | 145.29 | 149.79 | 159.19 | 162.69 | 160.90 | 147.98 | 18.44% |
| 1978 | 173.37 | 178.10 | 183.78 | 175.54 | 176.27 | 183.93 | 189.08 | 206.24 | 212.31 | 227.79 | 206.54 | 208.28 | 193.44 | 30.72% |
| 1979 | 227.38 | 246.15 | 242.21 | 238.85 | 257.44 | 279.62 | 295.33 | 301.99 | 356.97 | 392.73 | 392.16 | 461.01 | 307.65 | 59.05% |
| 1980 | 675.38 | 655.51 | 553.63 | 516.77 | 513.91 | 600.72 | 643.27 | 627.51 | 675.74 | 660.34 | 622.48 | 594.81 | 611.67 | 98.82% |
| 1981 | 557.34 | 500.26 | 498.76 | 494.90 | 479.79 | 460.76 | 408.84 | 410.96 | 444.10 | 434.19 | 413.67 | 408.74 | 459.36 | -24.90% |
| 1982 | 384.12 | 374.07 | 330.25 | 350.49 | 334.40 | 314.98 | 340.10 | 365.95 | 435.56 | 421.77 | 414.99 | 445.43 | 376.01 | -18.14% |
| 1983 | 479.89 | 490.41 | 419.70 | 432.19 | 435.56 | 412.84 | 423.05 | 416.25 | 411.45 | 393.21 | 382.25 | 387.14 | 423.66 | 12.67% |
| 1984 | 370.89 | 385.95 | 394.26 | 381.66 | 377.26 | 377.67 | 346.44 | 347.69 | 340.91 | 340.11 | 340.86 | 319.42 | 360.29 | -14.96% |
| 1985 | 302.79 | 298.82 | 303.94 | 324.90 | 316.37 | 316.49 | 317.81 | 330.23 | 322.62 | 326.02 | 325.47 | 322.42 | 317.32 | -11.92% |
| 1986 | 345.49 | 339.33 | 345.42 | 340.55 | 432.46 | 342.79 | 348.85 | 376.85 | 419.01 | 423.62 | 398.81 | 391.23 | 375.37 | 18.29% |
| 1987 | 408.26 | 401.32 | 408.91 | 438.37 | 460.12 | 449.59 | 450.81 | 460.88 | 460.20 | 465.36 | 466.47 | 486.31 | 446.41 | 18.93% |
| 1988 | 476.58 | 441.90 | 443.61 | 451.88 | 450.84 | 451.33 | 437.63 | 431.31 | 412.79 | 406.78 | 420.07 | 418.49 | 436.93 | -2.12% |
| 1989 | 404.01 | 387.78 | 390.14 | 384.40 | 371.32 | 367.60 | 374.98 | 364.93 | 361.89 | 366.84 | 392.32 | 409.15 | 381.28 | -12.74% |
| 1990 | 410.11 | 416.83 | 393.06 | 374.27 | 369.19 | 352.33 | 362.53 | 395.03 | 389.46 | 380.74 | 381.72 | 378.16 | 383.62 | 0.61% |
| 1991 | 383.64 | 363.83 | 363.34 | 358.39 | 356.82 | 366.72 | 367.51 | 356.23 | 348.78 | 358.68 | 359.53 | 361.02 | 362.04 | -5.62% |
| 1992 | 354.45 | 353.89 | 344.34 | 338.50 | 337.24 | 340.81 | 353.05 | 342.96 | 345.55 | 344.38 | 335.08 | 334.66 | 343.74 | -5.05% |
| 1993 | 329.01 | 329.35 | 330.07 | 341.91 | 366.72 | 371.89 | 392.41 | 378.46 | 354.85 | 365.45 | 373.49 | 383.69 | 359.77 | 4.66% |
| 1994 | 387.02 | 382.01 | 384.13 | 378.20 | 381.21 | 385.64 | 385.44 | 380.43 | 391.80 | 389.77 | 384.37 | 379.61 | 384.14 | 6.77% |
| 1995 | 378.55 | 376.51 | 382.12 | 397.11 | 385.46 | 387.56 | 386.23 | 383.65 | 382.22 | 383.14 | 385.53 | 387.42 | 384.22 | 0.01% |
| 1996 | 399.59 | 404.73 | 396.21 | 392.96 | 391.98 | 385.58 | 383.69 | 387.43 | 382.97 | 381.07 | 378.46 | 369.02 | 387.81 | 0.93% |
| 1997 | 355.10 | | | | | | | | | | | | | |

AVERAGE MONTHLY & YEARLY SILVER PRICES WITH PERCENTAGE FROM PREVIOUS YEAR
(Handy & Harman Quote in dollars per troy ounce)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | YEARLY AVG. | % CHANGE PRIOR YR |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|----------------------|
| 1975 | 4.19 | 4.36 | 4.33 | 4.21 | 4.54 | 4.49 | 4.70 | 4.93 | 4.52 | 4.33 | 4.39 | 4.08 | 4.42 | |
| 1976 | 4.06 | 4.09 | 4.19 | 4.36 | 4.49 | 4.81 | 4.77 | 4.24 | 4.30 | 4.23 | 4.37 | 4.35 | 4.35 | -1.58% |
| 1977 | 4.41 | 4.54 | 4.84 | 4.78 | 4.69 | 4.44 | 4.50 | 4.44 | 4.35 | 4.76 | 4.83 | 4.71 | 4.61 | 5.98% |
| 1978 | 4.93 | 4.94 | 5.27 | 5.12 | 5.12 | 5.32 | 5.33 | 5.49 | 5.57 | 5.82 | 5.87 | 5.93 | 5.40 | 17.14% |
| 1979 | 6.25 | 7.42 | 7.45 | 7.49 | 8.37 | 8.54 | 9.14 | 9.33 | 13.96 | 16.78 | 16.60 | 21.79 | 11.09 | 105.37% |
| 1980 | 38.26 | 35.09 | 24.13 | 14.50 | 12.53 | 15.75 | 16.06 | 15.90 | 20.14 | 20.18 | 18.65 | 16.39 | 20.63 | 86.02% |
| 1981 | 14.75 | 13.02 | 12.34 | 11.44 | 10.85 | 10.00 | 8.63 | 8.93 | 10.04 | 9.25 | 8.46 | 8.43 | 10.51 | -49.05% |
| 1982 | 8.03 | 8.27 | 7.21 | 7.31 | 6.67 | 5.58 | 6.50 | 7.14 | 8.28 | 9.46 | 9.89 | 10.59 | 7.91 | -24.74% |
| 1983 | 12.40 | 13.96 | 10.62 | 11.69 | 12.98 | 11.75 | 12.09 | 12.10 | 11.92 | 9.84 | 8.84 | 9.12 | 11.44 | 44.63% |
| 1984 | 8.18 | 9.13 | 9.65 | 9.22 | 8.97 | 8.74 | 7.42 | 7.61 | 7.26 | 7.32 | 7.49 | 6.69 | 8.14 | -28.85% |
| 1985 | 6.10 | 6.07 | 6.01 | 6.15 | 6.28 | 6.17 | 6.10 | 6.25 | 6.05 | 6.19 | 6.13 | 5.89 | 6.12 | -24.82% |
| 1986 | 6.05 | 5.87 | 5.64 | 5.23 | 5.11 | 5.15 | 5.05 | 5.22 | 5.68 | 5.67 | 5.60 | 5.36 | 5.47 | 10.62% |
| 1987 | 5.43 | 5.49 | 5.68 | 7.43 | 8.44 | 7.41 | 7.68 | 7.85 | 7.59 | 7.56 | 6.66 | 6.79 | 7.00 | 27.97% |
| 1988 | 6.73 | 6.32 | 6.41 | 6.48 | 6.54 | 7.04 | 7.15 | 6.71 | 6.36 | 6.28 | 6.29 | 6.11 | 6.54 | -6.57% |
| 1989 | 5.97 | 5.89 | 5.93 | 5.79 | 5.45 | 5.28 | 5.24 | 5.18 | 5.13 | 5.13 | 5.47 | 5.53 | 5.50 | -15.90% |
| 1990 | 5.24 | 5.28 | 5.06 | 5.05 | 5.07 | 4.91 | 4.86 | 4.98 | 4.79 | 4.36 | 4.17 | 4.07 | 4.82 | -12.36% |
| 1991 | 4.02 | 3.72 | 3.96 | 3.97 | 5.04 | 4.39 | 4.30 | 3.94 | 4.03 | 4.10 | 4.06 | 3.91 | 4.04 | -16.18% |
| 1992 | 4.12 | 4.14 | 4.10 | 4.03 | 4.07 | 4.06 | 3.95 | 3.80 | 3.76 | 3.74 | 3.76 | 3.72 | 3.94 | -2.48% |
| 1993 | 3.68 | 3.64 | 3.65 | 3.96 | 4.15 | 5.38 | 5.04 | 4.81 | 4.17 | 4.33 | 4.50 | 4.97 | 4.27 | 8.46% |
| 1994 | 5.13 | 5.27 | 5.45 | 5.31 | 5.44 | 5.39 | 5.29 | 5.20 | 5.53 | 5.44 | 5.20 | 4.77 | 5.29 | 23.67% |
| 1995 | 4.76 | 4.70 | 4.65 | 5.52 | 5.55 | 5.35 | 5.17 | 5.40 | 5.41 | 5.34 | 5.29 | 5.15 | 5.19 | -1.89% |
| 1996 | 5.47 | 5.63 | 5.51 | 5.40 | 5.36 | 5.14 | 5.02 | 5.11 | 5.01 | 4.93 | 4.83 | 4.79 | 5.18 | 0% |
| 1997 | 4.76 | | | | | | | | | | | | | |

TABLE T-8

AVERAGE MONTHLY AND YEARLY GOLD PRICES WITH PERCENTAGE CHANGE FROM PREVIOUS YEAR



3826 3509

AVERAGE MONTHLY AND YEARLY SILVER PRICES WITH PERCENTAGE CHANGE FROM PREVIOUS YEAR

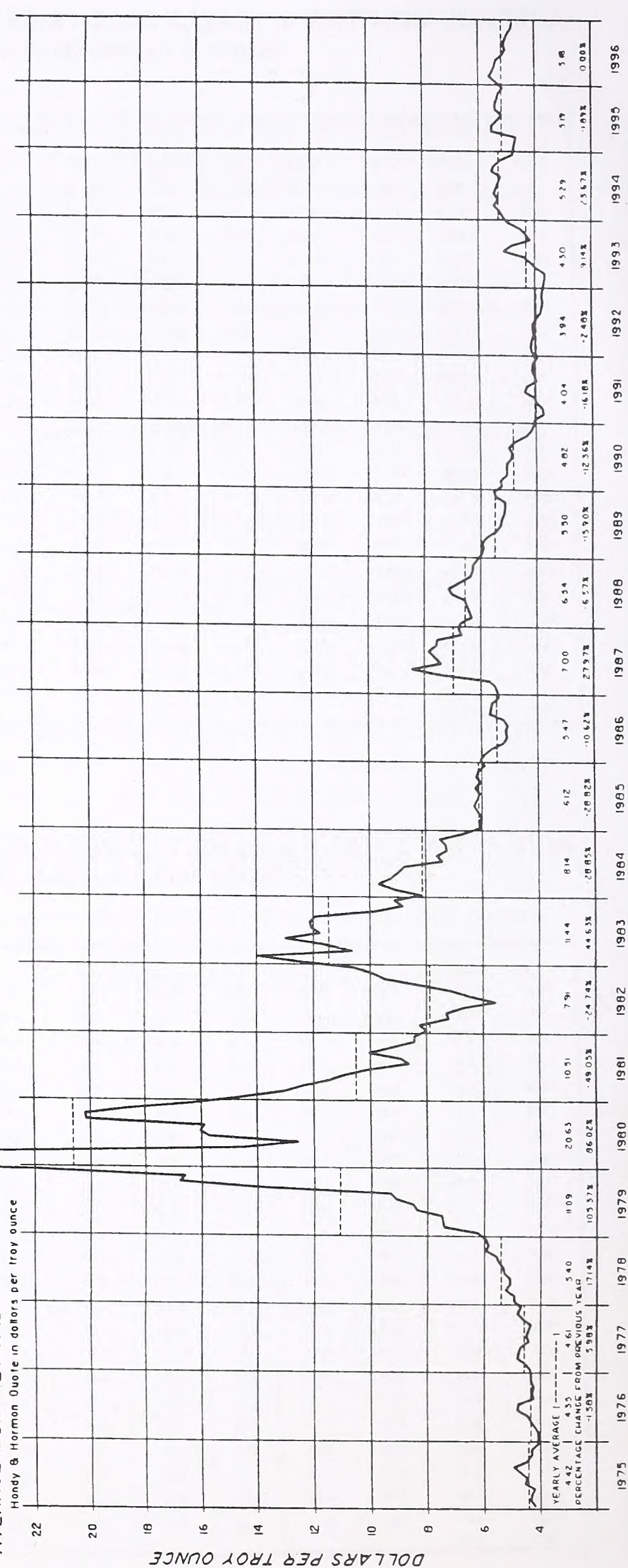


TABLE T-9



UNION Asphalt, INC.

TABLE T-10

ASPHALTIC CONCRETE • PAVING MATERIALS

TELEPHONES: OFFICE - (805) 922-3551

PLANT - (805) 937-5151

POST OFFICE BOX 1280

SANTA MARIA, CALIFORNIA 93456

Effective -- November 1, 1990 and as of 11/1/91
JRE

Union Asphalt, Inc.
Rocky Canyon Plant

Atascadero

| | Price per Ton F.O.B. Rocky Canyon |
|----------------------------------|--------------------------------------|
| <u>Base Crusher Run</u> | |
| Class II | \$4.45 |
| Class III (Co. of S.L.O. Spec's) | 4.00 |
| Sub Base (DG) JRE | 1.70 |
| <u>Hot Plant Aggregates</u> | |
| 3/4" Rock | \$5.40 |
| 1/2" Rock | 6.90 |
| 3/8" Rock | 6.90 |
| Rock Dust | 4.20 |
| <u>Miscellaneous Aggregates</u> | |
| 1 1/2" Rock | \$5.40 |
| Rip Rap | 8.00 |
| Surge Rock | 5.00 |
| <u>Concrete Rock, Washed</u> | |
| 3/4" Rock | \$6.00 |
| 3/8" Rock | 7.75 |

Chips - Made on request only - Call for Quote

Discount: Licensed Contractors will be allowed a \$.20¢ per ton discount on tons purchased and paid in full by the 10th of the month following invoice.

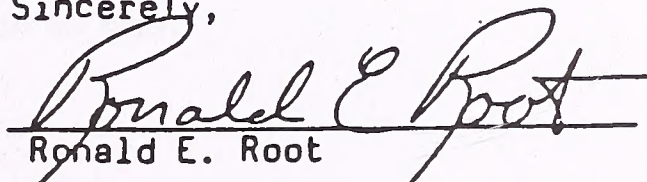
Taxes: All prices quoted are subject to applicable taxes and will be added to the above prices.

Reservations:

Union Asphalt, Inc. reserves the right to accept or reject the sale of products at all times. Prices are subject to change without notice.

Trucking: At current P.U.C. rate.

Sincerely,


Ronald E. Root

45

1/ No concrete sand sold
JRE

JRE additions 11/1/91

d. Market History

Describe and discuss the period when the commodity in question has been sold in the market, as well as the distribution of sales price through the period. Graphic representation of the number of sales, volume of sales, or sales price through time periods must be presented in a concise, easily understood manner.

e. Market Supply and Demand

There is no question that FMV is influenced by market supply and demand conditions. There must be a reasonable expectation or actual evidence that the mineral commodity in questions can be sold in the market place. This market may be local, statewide, nationwide. or worldwide. It is the job of the mineral appraiser to determine these market conditions and translate them into terms of how much material can be sold in unit and overall time periods. For example, a market that can absorb 1,000,000 tons of specialty limestone over a 10-year period at a rate of 100,000 tons per year is a good one presuming there are the necessary tons in the mineral deposit.

f. Market Entry

Indicate whether or not the commodity is being sold currently in the market. If so, support the sales with copies of sales receipts, and/or statements from buyers, witnesses, or information describing the findings of the mineral examiner. Where there are no current sales from the deposit, market entry must be discussed by the mineral appraiser. Contracts or letters of agreement, assuring future purchases at a specified or market price are important documents to use in establishing future market entry. In the absence of any agreements, an mineral appraiser must make their own studies in relation to market entry. Estimates of the type of products, and the ability of the mineral products in question to be competitive, are of real concern. With no contracts or agreements, mineral appraisers must do their own research on market entry possibilities.

g. Extraction Rates, and Remaining Economic Life

These factors are important because the mineral appraiser must know if a proposal of a potential operator is reasonable for the mineral operation in question. If part of a proposal is not reasonable, the appraiser must try to talk with the mineral interests owner. If agreement cannot be reached, then the appraiser must use his technical judgement. Where an operation is ongoing, the mineral appraiser must understand technical aspects of these factors. All this attention is necessary because capital and operating costs must be obtained for inputs to the economic analyses.

Actual and projected tons and grade of materials are entered each year for production life. The recovered material is key and reflects the sales product after the recovery (waste) factor is applied. Production rate and the length of production time is based on market entry (share), amount of reserves, and waste factor. Mineral appraisers must determine to the best of their ability how much the recovered material is entering and can in the future enter the market place for sale. If the commodity is gold, the assumption is you can sell all you can produce. If the commodity is say, carbonate rock, all that can be sold annually by individual use must be determined through a study of past production records and/or a market entry study based on product specifications, demand, and market share. If material is not being sold, then future sales can be documented through contracts or letters of agreement assuring future purchases.

A reasonable extraction rate for the mineral operation must be determined. The extraction rate is mainly a function of market, reserves, waste factors, costs, ability to technically extract, and the amount of time over which extraction will take place. For most operations, 20 years of productive life is the maximum life that should be analyzed, because of the time value of money.

There must be sufficient reserves to last the time frame under consideration with the stipulated extraction rate. For example, if it is determined that there are 20 million tons of reserves that can be extracted at a rate of 1 million tons per year, then there would be just enough reserves to last 20 years. However, if the extraction rate is increased due to market demand, then the economic life of the mineral operation will be reduced proportionately down, unless new reserves can be blocked out. New reserves can be blocked out depending on such things as operating and new capital costs, an increase in the selling price of the commodity extracted, and the actual occurrence of the commodity in question with the proper quality (tons and grade).

Income is the key here, and the economic or remaining economic life of a mineral operation for income generation is critical for the appraisal and must be examined or determined with great care, whether the appraisal is for a royalty rate or for a mineral deposit.

5. EXPLANATION OF COMPONENTS FOR A DCF MODEL

a. Cash Flow (CF)

This is an analysis of actual or prospective net inflow/outflow of money that occurs during a specified time period.

That is:

Gross Revenue

- Operating expenses
- Taxes
- Capital costs
- = Cash flow

b. Discounted Cash Flow (DCF)

As previously discussed, this is a method where a potential CF is discounted at a given discount rate (DR) over the time of the economic evaluation. The discounted values of the annual cash flows, usually no more than 20 years of productive mine life, are added cumulatively to obtain a net present value (NPV).

c. Discount Rate (of Return) (DR)

In valuing mineral properties a discount rate is generally considered synonymous with these terms: cost of capital, opportunity costs of capital and minimum acceptable rate or return on investment. The rate of return is used to convert an income stream into value and should represent an acceptable rate of return to be realized on generally similar mineral property investment opportunities with reasonably similar risk factors. Inherent in the concept is that a person or corporation, passed up an opportunity to invest in other similar mineral investment opportunities to invest in the property in question. Also, a high rate of return can be used to attract outside capital to a mineral investment.

A discount rate is the measure of the time value of money over the operating years of the economic analysis. The rate selected should be based on the anticipated (by the investor) annual future rate of return on the investment and, over the life of the project, represents both the anticipated return on the investment and the recapture of the investment itself. For an operating mine it is important to determine what rate of return has been obtained for, say, the past five years and what is anticipated and appears reasonable for the mine operation to achieve in the future. Many DR from industrial mineral operations will reflect value added sales, so be careful, find out details and work to a lower rate if necessary.

The determination of a proper DR for analysis of mineral investments is often difficult. There are few direct sources of DR's available and rates for mineral investments of a 20-year term are generally lower than for short term real property investments. Short term investment rates, bonds, and so forth are not appropriate for the longer term of mineral investments.

Mineral rates should be compared with mineral rates and obtained from mineral operations.

The best test for reasonableness of discount rate is comparison with rates in use by mineral producers. As challenging as this is to do, a concerted effort must be made by the mineral appraiser to obtain a rate that is reasonable and appropriate for the property in question. In this, there is no substitute for the personal knowledge and experience of the appraiser.

The discount rate must be obtained from and applied to F.O.B. product sales income, not value-added products or income. For example, sales of processed sand and gravel only are to be considered, not sales of asphaltic concrete (oil added) or concrete aggregate (cement added). The rates will vary from commodity to commodity and are not interchangeable. The discount rate for sand and gravel will be lower than for high quality limestone and, or gold.

Commodities will require different rates as there are usually great differences in the processing costs, capital expenditures, and selling prices from which the rates are obtained.

As used here, the discount rate reflects an annual percentage rate of return on invested capital used to determine NPV. The rate discounts future cash flows to present worth.

A discounted cash flow (DCF) for each individual year of analysis can be calculated as follows:

$$PV = \frac{FV}{(1+DR)^t} + \frac{FV}{(1+DR)^{t+1}} + \frac{FV}{(1+DR)^{t+n}}$$

$$PV = \frac{1}{(1+DR)^t}$$

PV = Present value (\$)

FV = Future Value (\$)

DR = Discount rate

t = Time; mid year ½..1½

..2½, or end of year,

...1...2...3...,etc.

For example, say \$1 at 12% (mid year)

$$PV = \frac{1}{(1+0.12)^{1/2}} = 0.9449,$$

and \$1 at 12% (annual)

$$PV = \frac{1}{(1+0.12)^1} = 0.8929$$

d. Internal Rate of Return (IRR)

A discount rate that will fix the present worth at zero is called an internal rate of return (IRR). If the rate of return is less than the discount rate used, then the mineral property should be a poor investment. Conversely, if the rate is greater than the discount rate used, the investment should be a good one.

e. Inflation and Inflation Rate (IR)

Inflation refers to the decline in value of money (price or value of "basket of goods" items) as measured by what it will buy. Generally measured by Consumer Price Indexes (CPI) published monthly and yearly by the U.S. Bureau of Labor Statistics. Inflation is in dimensionless numbers, but expressed as a percentage rate. This index is developed by examination of costs of "basket of goods" items. Price increases alone do not mean that inflation occurs because the price increase may be accompanied by an increase in productivity. Productivity increase is possible with some mineral operations that are able to conserve, consume less, or use low cost substitutes, but overall the CPI does not reflect these concepts.

f. Escalation and Escalation Rate (ER)

Escalation refers to a change in price or value through time (annual basis) for specific items such as selling prices, operating costs, nondepreciable and depreciable capital costs, and royalty rates that do not rise or fall at the same percentage rate. Because these prices and costs rise at different rates, a DCF or other economic analysis should not be influenced by a single overall rate of inflation. Costs, prices, and rates should be escalated at different rates in order to reflect the differences and make economic analyses closer to the truth.

Mining and milling and other Costs Indices (CI) of the U.S. Department of Labor Statistics and actual history of mineral operations can be used to determine different escalation rates for DCF analysis.

Different (historic) escalation rates in percent can be computed from the last 5 years of different CI. For example, say the Mine Labor Index for 1987 is 12.52 and for 1992 is 14.12; the expenditure is \$100,000.

$$\text{So } \$100,000 \times \frac{14.12}{12.52} = \$112,780$$

the average annual increase is:

$$14.12 - 12.52 = 1.60, \text{ and}$$

$$1.60/12.52 = 0.128 \text{ or } 12.8\% \text{ and,}$$

$$12.8\%/5 \text{ yrs.} = \underline{2.56\%};$$

$$\text{or, } 1.60/5 \text{ yrs.} = 0.32, \text{ and } 0.32/12.52 = 0.0256 \text{ or } \underline{2.56\%};$$

$$\text{or } (112,780 - 100,000)/\$100,000 = 0.1278/5 \text{ yrs.} = 0.0256 \text{ or } \underline{2.56\%}$$

From the different indices for different subjects from 1988 to 1992 an average percentage rate increase can be calculated for each different cost. These percentages are considered the escalation rates.

These percentage rates are then used to determine escalated dollars for each cost to be escalated by the following formula:

$$A = FV(1+E)^t$$

FV = Future value (\$)
E = Escalation rate (%) - decimal
t = Time (years)
A = Adjusted rate (%) - decimal

For example, a selling price of \$3.60 per ton escalated at 2.0% for 20 years is:

$$A = \$3.60 (1 + 0.020)^{20} = \$5.35$$

Where nondepreciable capital costs are involved they usually are not escalated based on the above indices. Often, a rate at or near the overall rate of inflation for the time period of evaluation is reasonably correct. An escalation rate for product selling prices is best derived through examination of the past 5 years of sales receipts from the mining company in question. If a deposit is not in production, then the industry experience of the mineral appraiser is vital for developing a reasonable escalation rate.

An appropriate escalation rate should be included in the DR, not an inflation rate, as it will be more accurate than the inflation rate. Many market DR have an inflation component factored in, so be careful. Consideration of a future escalation rate in the DR also accounts for depreciation on depreciable future capital costs. If future costs are not escalated, future depreciation will be on a lower price, and the increase cannot be deducted.

g. Risk and Risk Factor (RF)

Risk refers to the possibility of not receiving the amount of anticipated income and/or cash flow during the productive life of a mineral operation and/or experiencing long delays in lead time to first production. Several situations can lead to problems. Some of the more common concepts that should be considered in deriving a risk factor are:

- Significant grade variability of reserves causing lower income and/or higher operating costs to control mill or processing feed.
- Amount of reserves less than anticipated resulting in premature mine shutdown.
- Extensive variance in milling and/or processing techniques needed to account for proper recovery of complex or impurity-bearing mineral materials causing higher than anticipated operation costs.
- Loss of ability to maintain production, and/or to sell products into a competitive marketplace at anticipated prices resulting in a significant or total loss of market share.
- Untimely completion of projects with available depreciable capital resulting in missed deadlines and, eventually, loss of income.
- Planning or permitting (environmental and reclamation) problems causing delay in mineral operation startup and/or delays during operating life. This results in delay of initial income, or reduction of income over operating life of the mineral operation.

To assign a quantitative and objective factor for risk is not possible. Nevertheless, a risk factor of some kind should be assigned to a mineral operation. Experience and managerial judgement of the company in question and the experience and judgement of the mineral appraiser are critical to approximate a risk factor. The first few years of any operation are usually the most critical and risky.

A percentage risk factor is applied to the NPV in this system. Risk is not factored into the discount rate, because risk is not really reflected adequately through the future value of money and because the above described situations concerning risk adjustment can be more adequately accounted for by applying a percentage factor to reduce the NPV.

h. Net Present Value (NPV)

The sum of the present values of all future years cash flows over the economic life of a mineral property, (usually no more than 20 years) after

being discounted at a specified discount rate is the NPV. The NPV takes into account the earning power of money over time. It is an indicator of the FMV of a mineral property for its projected life with a specified rate of return on investment. A positive value means that invested money will earn a higher rate of return than that indicated by the discount rate. If the value is zero the invested money will earn a rate of return equal to the discount rate. If the value is negative, then invested money will earn less than that indicated by the discount rate.

i. Costs and Salvage Value

Sources of costs data other than knowledge and experience of the mineral appraiser are: Mining Costs Service, Engineering and Mining Journal, Mining Engineering, Pit and Quarry, Rock Products, my Little Salesmen, and manufacturers and sellers of mining equipment.

1) Operating Costs are costs in the year incurred, but escalated for future use on an annual basis. Examples of operating costs are:

- Labor (union or otherwise) and management wages;
- Maintenance and standby;
- Vehicle maintenance;
- Payroll and sales taxes;
- Vacation and holiday;
- Workman comp. insurance;
- Employee benefits;
- Overhead;
- Fuel (diesel or other);
- Power;
- Contract stripping;
- Contract tracking;
- Packaging costs, labor, bags, and so forth;
- Supplies and small tools;
- Blasting;
- Equipment rental;
- Insurance;
- Repair and maintenance (plant, ground);
- Repair and maintenance (equipment);
- Advertising and sales;
- Bad debts;
- Dues and subscriptions;
- Office supplies;
- Outside services;
- Legal and audit;
- Licenses;
- Travel and entertainment;
- Telephone;

- Utilities;
- Vehicle gas and tires;
- Stripping and ground shaping;
- Processing plant fee (per ton);
- Reclamation and environmental;
- Reagents, and;
- Miscellaneous.

- 2) Working Capital Costs are costs necessary to operate a mineral operation initially until income is received. Such costs may be for acquiring inventories of goods and supplies, day to day expenses, a supply of cash for emergencies, and so forth. These costs cannot be expensed, depreciated, amortized, or depleted until items are placed into service or used. For our analyses these costs usually are considered sunk, even though when a mine goes into production, these costs could be recovered eventually over time. Sunk Costs represent money spent in the past with no likelihood of recovering them. If a mineral operation is on stream, working capital costs are generally not figured.

- 3) Depreciable Capital Costs are for tangible property of mining, milling, processing equipment, buildings, other equipment such as vehicles, and so forth. They are escalated for future use on an annual basis. These costs are depreciable for tax purposes and must meet the following requirements:
 - a) Be used in mine operation for income generation.
 - b) Have determinable useful life and that life must exceed one year.
 - c) Be an item that wears out, is used up, becomes obsolete, or loses value from natural causes.
 - d) Be placed in service in a usable condition.

Over time, many of these costs are depreciated on the 7-year MACRS schedule. These costs should be escalated on an annual basis. For a mineral operation that has been ongoing for some years, it is important to determine how much of these costs (and nondepreciable costs) have been paid off at the time period of the economic evaluation. Items paid off should not be recosted in the economic program. Enter into the economic flow as it exists during the examination to reflect the actual, current situation.

- 4) Salvage Value is the value of any property at the end of its useful life through sale or disposition.

- 5) Nondepreciable Capital Costs are for such items as environmental and reclamation costs, mobilization costs for contract mining, and exploration and development costs. They can be escalated for future use on an annual basis.
- 6) Exploration Costs are expenditures required to show the existence, extent, quantity, or quality of a new mineral deposit. Costs may include core drilling, assaying, engineering and geological exploration fees, mine excavation, and so forth. For our work, expense in full in the year spent by individual taxpayers. For corporations, expense 70% in year spent, and amortize 30% straight line over 60 months. If mining a venture is unsuccessful, and abandoned, costs remain a deduction, but, if the venture is successful, expensed deductions must be recaptured. For our work, restore costs to expensed fraction by charging it as income. NOTE: capital equipment or improvements used for exploration are not exploration costs if those costs are recoverable through depreciation. Also, acquisition costs are not considered exploration costs.
- 7) Development Costs are expenditures made after the determination that a mineralized body is economically viable and the decision made to develop that body. These costs may include exploration type costs, but only after a decision is made to develop the mine. An individual taxpayer can deduct 100% of costs, but corporations must deduct only 70% and amortize 30% of the costs straight line over 60 months. Costs are to be recaptured. Development costs end when mine is in full production, and become operating costs.
- 8) Intangible Drilling Costs (Oil and Gas) are the costs of drilling oil and gas wells to completion (including reclamation of the well site). These costs can be capitalized for cost depletion or expensed fully in the year the costs occurred by individual or corporate producers. There is an exception, however, to this rule. An integrated producer that produces more than 50,000 barrels of crude oil per day on a daily average over a year, or has retail sales of oil and gas over five million dollars per year, can expense only 70% of these costs in the year spent, then amortize 30% straight line over 5 years starting in the month costs are incurred. Both types of producers can expense dry hole drilling costs in the year spent.

j. Mineral Tax Framework and Calculation

- 1) Capitalized Cost is cost not taken in the year incurred, but later through depletion, depreciation, or amortization over more than one year.

- 2) Expensed Cost is cost deducted fully in the year incurred.
- 3) Amortization is the process of a gradual extinguishment of an obligation by payment of part of the obligation at regular time intervals, usually monthly or annually.
- 4) Book (noncash) Deduction refers to a recovery of costs in before-tax-dollars through deductions over time, for example, depletion, amortization, and net loss carried forward.
- 5) Recapture is the act of foregoing a deduction until some amount of money is recouped.
- 6) Depreciation represents the concept that certain income producing assets do not last, but wear out with time. Therefore, a part of the asset cost can be a tax allowance over time beginning when the asset is placed in service. The Modified Accelerated Cost Recovery System (MACRS) is used nearly always in our analyses. Capital cost type equipment (new or used) for mining ventures that can be depreciated include mining, milling, and processing facilities, vehicles, buildings, furniture, and so forth.

The following schedule shows the MACRS depreciation percentage rates:

| If the Recovery Year is: | and the Recovery Period is: | | | | | |
|--------------------------------|-----------------------------|---------|---------|---------|---------|---------|
| | 3-year | 5-year | 7-year | 10-year | 15-year | 20-year |
| | the Depreciation Rate is: | | | | | |
| 1 | 33.33 % | 20.00 % | 14.29 % | 10.00 % | 5.00 % | 3.750 % |
| 2 | 44.45 | 32.00 | 24.49 | 18.00 | 9.50 | 7.219 |
| 3 | 14.81 | 19.20 | 17.49 | 14.40 | 8.55 | 6.677 |
| 4 | 7.41 | 11.52 | 12.49 | 11.52 | 7.70 | 6.177 |
| 5 | | 11.52 | 8.93 | 9.22 | 6.93 | 5.713 |
| 6 | | 5.76 | 8.92 | 7.37 | 6.23 | 5.285 |
| 7 | | | 8.93 | 6.55 | 5.90 | 4.888 |
| 8 | | | 4.46 | 6.55 | 5.90 | 4.522 |
| 9 | | | | 6.56 | 5.91 | 4.462 |
| 10 | | | | 6.55 | 5.90 | 4.461 |
| 11 | | | | 3.28 | 5.91 | 4.462 |
| 12 | | | | | 5.90 | 4.461 |
| 13 | | | | | 5.91 | 4.462 |
| 14 | | | | | 5.90 | 4.461 |
| 15 | | | | | 5.91 | 4.462 |
| 16 | | | | | 2.95 | 4.461 |
| 17 | | | | | | 4.462 |
| 18 | | | | | | 4.461 |
| 19 | | | | | | 4.462 |
| 20 | | | | | | 4.461 |
| 21 | | | | | | 2.231 |

- 7) Depletion is used for mineral extraction analyses because minerals for federal tax purposes are considered wasting assets. A gradual reduction of the original amount of minerals by extraction and sales through time is then considered depletion. Theoretically, the depletion allowance will return the value basis of the original mineral deposit. Depletion is figured by two methods; one is by cost and the other is by percentage. Tax payers should use both methods, then select the method that shows the most deduction. In our analyses, Percentages Depletion is mostly used. It is figured as a specified percentage (by mineral commodity group) of gross income after royalty payments for the sales of minerals during the tax year. However, the deduction for depletion cannot exceed 50% of the taxable income after all deductions except depletion and loss carried forward deductions (100% for oil and gas). If the 50% value is exceeded, use the 50% value. The following schedule shows the allowable percentage depletion for solid minerals.

Allowable Percentages for Percentage Depletion of Solid Minerals.

- (1) Sulfur and uranium; and if from deposits in the U.S., anorthosite, clay, laterite, and nephelite syenite (to the extent that alumina and aluminum compounds are extracted from it), asbestos, bauxite, celestite, chromite, corundum, fluorspar, graphite, ilmenite, kyanite, mica, olivine, quartz crystals (radio grade), rutile, block steatite talc, zircon, and ores of the following metals: antimony, beryllium, bismuth, cadmium, cobalt, columbium, lead, lithium, manganese, mercury, molybdenum, nickel, platinum and platinum group metals, tantalum, thorium, tin, titanium, tungsten, vanadium, and zinc 22%
- (2) Domestic gold, silver, oil shale (except shale to which (5) applies), copper and iron ore 15%
- (3)(a) Ball clay, bentonite, china clay, sagger clay, metal mines (if not allowed in 22% group above), rock asphalt, vermiculite; and
- (b) All other minerals [including, but not limited to, aplite, barite, borax, calcium carbonate, clay (refractory and fire) diatomaceous earth, dolomite, feldspar, fullers earth, garnet, gilsonite, granite, limestone, magnesite, magnesium carbonates, marble, mollusk shells (including clam and oyster shells), phosphate rock, potash, quartzite, slate, soapstone, stone (used or sold for use by the mine owner or operator as dimension stone or ornamental stone), thenardite, tripoli, trona and (if not allowed in the 22% group above) bauxite, flake graphite, fluorspar, lepidolite, mica, spodumene, and talc [including pyrophyllite] except as specified in (A) and (B) below 14%
- (A) When minerals in group 3(b) are used or sold for use by the mine owner or operator as rip rap, ballast, road material, rubble, concrete aggregates, or for similar purposes the percentage is 5% (unless sold on bid in direct competition with a bona fide bid to sell a mineral listed in 3(a)).
- (B) Group 3(b) does not include soil, sod, dirt, turf, water or mosses; or minerals from sea water, the air or similar inexhaustible sources, or oil and gas wells.
- (4) Asbestos (if from deposits outside U.S.), brucite, coal, lignite, perlite, sodium chloride, and wollastonite 10%
- (5) Clay and shale used or sold for use in the manufacture of sewer pipe or brick, and clay, shale, and slate used or sold for use as sintered or burned lightweight aggregates 7½%
- (6) Gravel, peat, peat moss, pumice, sand, scoria, shale (except shale to which 15% or 7½% rate applies), and stone, except stone described in the 14% group; and, if from brine wells — bromine, calcium chloride, and magnesium chloride 5%
- IRC §613(b); Reg. §1.613-2.

For oil and gas percentage depletion, the allowance is 15%. However, integrated producers cannot take percentage depletion (see the section on Intangible Drilling Costs). Wells that produce less than an average of 15 barrels per day, (strippers) require special depletion consideration. Also, oil and gas producers have a 65% gross income limit so that depletion may never exceed this limit of taxable income from all of their production areas.

- 8) Full State and Federal Corporate Income Taxes can be computed together by the following:

$$S+F(1-S)=0.93+0.34(\text{or } 0.35)(1-0.093)=0.3927(39.27\%)\text{or } 0.4018(40.18\%)$$

$$S=\text{State Tax, CA} = 9.3\%, \\ F=\text{Federal Tax} = 34.0\%(\text{or } 35.0\%)$$

- 9) Individual Income Tax Rates must be figured on an individual basis.
- 10) California Property Tax is an ad valorem tax (in proportion to value) and as such cannot be figured directly in this model, but can be closely approximated at 1% of the Net Revenue. Other states have different tax structure and must be accounted for in the best way possible. For example, Nevada has a Proceeds of Minerals tax that applies in place of a State Corporate tax, and is on the net proceeds of minerals, not to exceed 5%.
- 11) Summary Considerations

Many mineral operations on Federal lands are large corporate ventures requiring the use of corporate tax frameworks rather than individual tax frameworks.

Consideration should be given to expensed (deducted fully in year incurred) and capitalized (not taken in year incurred and over more than one year) costs, loan interest, amortization concepts, and any loss carried forward. Some preproduction costs may have to be sunk. Mobile equipment depreciation costs are recovered by using 7 year MACRS property.

Depletion allowance benefits are usually recovered by percentage depletion at the appropriate percent of net revenue from commodity sales. The deduction for depletion cannot exceed 50 percent of the taxable income after all deductions, except depletion and deduction for net operating loss carried forward. Where the depletion allowance exceeds the 50 percent limit, the 50 percent figure is used.

State and/or county tax frameworks vary and must be accounted for adequately. California property taxes are Ad Valorem making an actual figure impossible to use as an input to the DCF unless actual data from company records can be used. Therefore, these taxes are estimated at one percent of the net revenue on an annual basis. Available tax records are vital to insure accuracy.

Mineral tax framework items must be accounted for in mineral appraisals. Where an operation is ongoing, the actual tax framework elements can be used as a guide to help determine value, even though the purchaser may have a different tax framework. Where there is no operation, but one is feasible, the mineral appraiser should generally use full rates in consideration for tax framework items. The tax framework is of major importance and must be considered fully, for it can drive an apparent profitable operation into one with a negative cash flow.

6. CONCLUSIONS

Strong technical and specialized data in geologic, engineering, and economic areas are needed for mineral appraisals. Skills in these fields are absolutely necessary for the mineral appraiser. Those skills not in hand must be developed. Mineral appraisal is a specialty business and those appraisers not knowledgeable in technical, legal, and economic concepts reading minerals should not make mineral appraisals.

Difficulties in modeling by CF or DCF methods, particularly on undeveloped mineral deposits are obvious. The IAV here involves the amount a reasonable purchaser under proper conditions would be willing to pay for the right to receive all the future income from a deposit - not just rental fees and/or bonus bids and/or royalty income.

Much data and experience are required in order to be reasonably accurate. Sometimes, appraisers must simply do the best they can with available data and experience and enhance the risk factors through admission of the inadequacies of the data base. Even so these methods can be realistic and in line with the way the majority of industry makes economic evaluation investment decisions for deposit purchases or sales.

F. ABBREVIATED APPROACHES

There are 6 situations that do not require comprehensive economic analysis. If obviously applicable, or if by preliminary inspection, the mineral appraiser thinks one or more of these situations could apply, they should be tried before beginning any comprehensive economic analysis. If any of these situations exist, then there is zero FMV.

These situations are as follows:

1. WHERE NO MINERALS EXIST, OR THEY EXIST IN SUCH LOW QUANTITIES THAT IT IS OBVIOUS THAT NO ECONOMIC ANALYSES ARE NEEDED. One example of the situation would be a property where platinum group elements are reported by a claimant, but none can be found by using appropriate analytical techniques. Another example would be a situation where appropriate types and numbers of assays of gold show 0.001 ounces per ton.
2. WHERE MINERALS EXIST, BUT CANNOT MEET SPECIFICATIONS FOR THE MARKET. An example would be a dolomitic and siliceous carbonate rock that is propertied to be salable for specialty limestone products, but the iron, magnesium, and silica content are too great to beneficiate economically. Another example is a common clay that will not meet the physical and chemical properties required by specialty clays.
3. WHERE CAPITAL COSTS ON AN UNDEVELOPED PROPERTY EXCEED THE PROJECTED GROSS REVENUE. An example would be a mineral property with X tons of total minerals at Y grade and Z recovery rate that cannot provide sufficient gross revenue from sales to cover the required cost of capital for placing the property into production. Consider a property that has 400,000 tons of complexed gold-bearing material at an average grade of 0.020 ounces per ton with a recovery rate of 80 percent. Here, gross income from sales is:

$$(400,000 \text{ tons}) \times (0.020 \text{ oz./ton}) = 8,000 \text{ oz}$$

$$(8,000 \text{ oz.}) \times (0.80) = 6,400 \text{ oz., and}$$

$$(6,400 \text{ oz.}) \times (\$380/\text{oz.}) = \underline{\$2,432,000}.$$

Say, projected capital costs for permitting, mining and processing, equipment, building, leach pad construction, and so forth are about \$3,700,000. Although a good part of the capital costs eventually may be depreciable over a seven year term after any amount of delay in start-up, tax credit delays plus necessary operating costs and replacement capital costs will be too great and insufficient for a viable economic operation.

4. WHERE OPERATING COSTS EXCEED PROJECTED GROSS REVENUE. If operating costs on an undeveloped mineral property, or a property in operation, exceed gross revenue, then the property or operation is not economically viable. For example, where operating costs per ton are \$100 and projected or actual income from sales is \$90 a ton, you have an economic loser.

5. WHERE MARKET ENTRY CANNOT BE ACHIEVED. An unfortunate situation can arise when dealing with some nonmetallic and metallic mineral deposits. Consider a suitable gypsum deposit in regard to tonnage and grade. It may not be currently economically viable, because the market sales area is too far away, or locally saturated and entry cannot be made without losing money.

Market entry capability may be fairly obvious, but not always. It may be necessary to perform detailed work on market entry capabilities, because the lowest economic level of f.o.b. sales prices may not be known without full DCF analysis. It is also possible that new product specifications may require too large a beneficiation cost to bring the deposit on line economically.

6. WHERE MINERAL EXTRACTION WILL NOT BE PERMITTED
If the land in question will be, or is withdrawn or zoned from mineral entry by governmental agencies, then mining is not permitted and there is no FMV for mineral interests. If stipulations are made by the agencies involved, permitting mineral extraction after transfer of ownership, as in an exchange, then it is possible to determine the FMV, or a reasonable royalty rate.

V. MINERAL APPRAISAL REPORTS

A. GENERAL

A mineral appraisal report should contain the written and graphic presentations of findings made during office research, laboratory testing, and field examination of a mineral deposit or operation. It should include documentary text, economic data and analyses, illustrations, testing results, interpretations, recommendations, and conclusions in regard to the appraisal. Reports should be complete and accurate, prepared in a clear and concise manner, and appropriate in tone. Thought and care must be given to the preparation of the report so it will convey to others the impression of competency based on accepted professional standards and compliance with current policies and legal interpretations of the Department of the Interior. Finally, a report must thoroughly and directly get the message across.

B. REPORT CHECKS

- Complete?
 - a. Does it give all necessary information?
 - b. Does it answer all questions the reader may raise?
- Concise?
 - a. Does it contain only essential facts?
 - b. Does it include only essential words and phrases?

- Clear?
 - a. Is the language adapted to the readers and are the words the simplest that carry the thought?
 - b. Do the words exactly express the thought?
 - c. Is the sentence structure clear, and the sentence short?
 - d. Does the paragraph contain only one main idea?
 - e. Are these ideas presented in the best order, and in as few words as possible?
- Correct?
 - a. Is the information accurate?
 - b. Do the statements conform with laws and regulations?
 - c. Is the writing free from grammatical errors?
- Appropriate in tone?
 - a. Will the tone bring the desired response?
 - b. Is the writing free from words that may arouse antagonism?
 - c. Is it free from jargon and legalistic phrases?
 - d. Is the active rather than passive "voice" used?
- Are your methods of investigation fully and clearly described and compatible with acceptable professional practice?
- Are the conclusions adequate to the data?
- Are your conclusions supported by your data?
- Is the purpose of the report clearly stated?
- Is your report well organized?
- Are illustrations pertinent, legible, and adequate?
- Is the Summary-Conclusions section appropriate and effective?

C. REPORT GOALS AND STANDARDS.

The following directives are from 43 CFR 2201.3-2 and -3. They are for exchanges, but have general application.

2201.3-2 Market Value.

- (a) In estimating market value, the appraiser shall:
 - (1) Determine the highest and best use of the property to be appraised;
 - (2) Estimate the value of the lands and interests as if in private ownership and available for sale in the open market;

(3) Include historic, wildlife, recreation, wilderness, scenic, cultural, or other resource values or amenities that are reflected in prices paid for similar properties in the competitive market;

(4) Consider the contributory value of any interest in land such as minerals, water rights, or timber to the extent they are consistent with the highest and best use of the property; and

(5) Estimate separately, if stipulated in the agreement to initiate in accordance with 2201.1 of this part, the value of each property optioned or acquired from multiple ownerships by the non-Federal party for purposes of exchange, pursuant to 2201.1-1 of this part. In this case, the appraiser shall estimate the value of the Federal and non-Federal properties in a similar manner.

(b) In estimating market value, the appraiser may not independently add the separate values of the fractional interests to be conveyed, unless market evidence indicates the following:

(1) The various interest contribute their full value (pro rate) to the value of the whole; and

(2) The valuation is compatible with the highest and best use of the property.

(c) In the absence of current market information reliably supporting value, the authorized officer may use other acceptable and commonly recognized methods to determine market value.

2201.3-3 Appraisal report standards.

Appraisals prepared for exchange purposes shall contain, at a minimum, the following information:

(a) A summary of facts and conclusions;

(b) The purpose and/or the function of the appraisal, a definition of the estate being appraised, and a statement of the assumptions and limiting conditions affecting the appraisal assignment, if any;

(c) An explanation of the extent of the appraiser's research and actions taken to collect and confirm information relied upon in estimating value;

(d) An adequate description of the physical characteristics of the lands being appraised; a statement of all encumbrances; title information, location, zoning, and present use; an analysis of highest and best use; and at least a 5-year sales history of the property;

(e) A disclosure of any condition that is observed during

the inspection of the property or becomes known to the appraiser through normal research that would lead the appraiser to believe that hazardous substances may be present on the property being appraised;

(f) A comparative market analysis and, if more than one method of valuation is used, an analysis and reconciliation of the methods used to support the appraiser's estimate of value;

(g) A description of comparable sales, including a description of all relevant physical, legal, and economic factors such as party to the transaction, source and method of financing, effect of any favorable financing on sale price, and verification by a party involved in the transaction;

(h) An estimate of market value;

(i) The effective date of valuation, date of appraisal, signature, and certification of the appraiser;

(j) A certification by the appraiser signing the report to the following:

(1) The appraiser personally contacted the property owner or designated representative and offered the owner an opportunity to be present during inspection of the property;

(2) The appraiser personally examined the subject property and all comparable sale properties relied upon in the report;

(3) The appraiser has no present or prospective interest in the appraised property; and

(4) The appraiser has not, and will not, receive compensation that was contingent on the analysis, opinions, or conclusions contained in the appraisal report; and

(k) Copies of relevant written reports, studies, or summary conclusions prepared by others in association with the appraisal assignment that were relied upon the appraiser to estimate value, which may include but is not limited to current title reports, mineral reports, or timber cruises prepared by qualified specialists.

D. REPORT FORMAT

No one format will do for all appraisal reports, but there are many items that should be in all reports. A sample format is given in Table T-11. Some essential sections for a report are shown in Table T-12. Table T-13 shows a sample format for the mineral appraiser qualifications statement, which must be in each appraisal report.

SAMPLE MINERAL APPRAISAL FORMAT

Serial Number
CA 20050

UNITED STATES
DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT

MINERAL APPRAISAL REPORT

Mineral Appraisal For The BLM Rocky Canyon 80-Acre Exchange Parcel
San Luis Obispo County, California

LANDS INVOLVED

Mount Diablo Base and Meridian

Township 28 S., Range 13 E.
Section 19, E $\frac{1}{2}$ SE $\frac{1}{4}$

Prepared by

Jim Evans

Jim Evans (BLM-CRME #007)
Senior Technical Mineral Specialist, CA-920

Gregg Wilkerson

Gregg Wilkerson, District Geologist, CA-015

Date

January 24, 1992

Technical Approval

Robert M. Wainwright

(Name-Print)

Robert M. Wainwright

(Signature)

Geologist

(Title)

Feb 19, 1992

(Date)

Management Acknowledgement

Glenn A. Carpenter

(Name-Print)

Glenn A. Carpenter

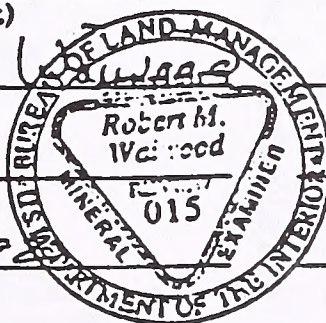
(Signature)

Area Manager

(Title)

MAR 06 1992

(Date)



Report Format By: Victoria Aguon

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ATTACHMENTS

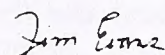
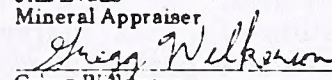
| | |
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| A-1 Expanded initial study-Hermreck Development Plan, June 20, 1988 | 26 pp. |
| A-2 San Luis Obispo County Land Use Permit, February 26, 1987 | 1 p. |
| A-3 San Luis Obispo Planning Commission Resolution No. 88-88, October 13, 1988 | 18 pp. |

SAMPLE SECTIONS OF A MINERL APPRAISAL REPORT

CERTIFICATION BY MINERAL APPRAISER

I hereby certify, to the best of my knowledge and belief:

1. the statements of fact contained in this report are true and complete. No known facts or opinions have been omitted which would materially affect the value estimate.
2. I have no present or intended future interest in the property appraised and have no personal interest or bias respecting the parties involved.
3. I did not receive any compensation that was contingent on the analysis, opinions or conclusions contained in this mineral appraisal report.
4. the reported analyses, opinions, and conclusions are limited only by the stated assumptions and limiting conditions and represent my personal findings based on unbiased professional analysis, opinions and conclusions.
5. this appraisal has been made in accordance with recognized and accepted appraisal practices and conforms with appropriate laws and regulations.
6. this report was prepared by the undersigned who are solely responsible for the analyses, opinion and conclusions.
7. that I have made a thorough personal inspection of the mineral property and operation that is the subject of this report.
8. that the property operator, a designated representative, or other parties of direct interest have been given opportunity to accompany me on a joint inspection of the property appraised


Jim Evans
Mineral Appraiser

Gregg Wilkerson
Mineral Appraiser

Purpose and Scope of Report

The purpose of this report is to arrive at a fair market value (FMV) of the mineral estate in an arms-length transaction (ALT) for the 80-acre BLM parcel in question.

The definition of FMV is taken from Uniform Appraisal Standards for Federal Land Acquisitions, 1973 and is as follows:

The amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property (mineral estate) would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy.

According to Black's Law Dictionary (5th edition, 1979), an ALT is:

...said of a transaction negotiated by unrelated parties, each acting in his or her own self interest; the basis for a fair market value determination.

or,

The standard under which unrelated parties, each acting in his or her own best interest, would carry out a particular transaction.

To carry out the purpose of the report, investigations were made into the land status and record data, geological relationships, mining and processing techniques and production records of UAI, and reclamation and environmental considerations. Assembled information was integrated into an economic evaluation and an appraisal of FMV.

GENERAL ASSUMPTIONS AND LIMITING CONDITIONS

1. It is assumed that title to the mineral estate is marketable, and that there are not extraordinary or hidden conditions or encumbrances that would affect the value of the property.
2. Certain information, data estimates and opinions were supplied by others during the course of this investigation. While material was verified insofar as possible it cannot be guaranteed.
3. The conclusions in this report are to be used only under the stated "Purpose and Scope of Report" and in the time period of evaluation.
4. This report addresses only mineral estate Fair Market Value (FMV).
5. No hazardous materials or substances were observed on the property. While the appraiser has no knowledge of the presence or absence of such substances or materials, he has no special qualifications for detection or identification of such materials. This FMV is based on the assumption that no such materials are present that would cause a loss in value.
6. It is assumed that the future mineral operation of Union Asphalt, Inc. will be permitted by San Luis Obispo County and that the operation will comply with all reclamation and environmental constraints, and required health and safety requirements.

MINERAL APPRAISAL

General Assumptions

Our mineral appraisal of the BLM 80-acre parcel by the DCF income approach to value is with the following assumptions:

- HWA (proponent of exchange) is doing business through its wholly owned subsidiary UAI with a crushed rock operation and quarry for aggregates adjacent on the west of the BLM parcel in Rocky Canyon.
- The crushed rock operation is on property owned by Dallaire and under lease to HWA to UAI.
- The BLM parcel is land locked by private property.
- HWA has a mineral right to the exclusion of any others and it is not feasible that any others will obtain a lease right in the foreseeable future from Dallaire.
- This appraisal will be made in consideration of the proponent's mineral operation with the concept that the sale is to them and not on the open market, and that they are qualified and capable to continue on with a crushed rock operation.
- The economic evaluation will consider the posture of the mineral operation at present (date of appraisal).
- That more than sufficient reserves exist for the time period of evaluation.
- That to meet mine plan requirement UAI will have to mine from Dallaire's property contemporaneously with mining from the BLM parcel starting in project life year 12 (2004).
- That some needed additional permits to mine on the BLM parcel (assuming exchange takes place) will be obtained, and any needed environmental and reclamation mitigation will be accomplished.
- That the projected production rate over time is reasonable.
- That UAI will obtain needed permits, acquire the BLM property and begin production in the second project life year. This assumption is here made even through the HMA - Dallaire lease apparently requires four more years of production from Dallaire's property.
- That a plant processing fee will be charged by Dallaire for every ton of rock from the BLM parcel that is put through UAI processing plant on his property.
- There is no room, nor is it feasible because of the mine plan, lease terms, and topography to place the processing plant on the BLM parcel after ownership transfers.
- That the UAI operation will result in production in 1994 after 2 years time for environmental studies, and permitting.

SUMMARY AND APPRAISED VALUE

Our purpose is to arrive at a fair market value (FMV) for exchange of an 80-acre Bureau of Land Management (BLM) parcel in S. 19, T. 28 S., R. 13 E., MDM, about 1½ airline miles SE of Atascadero, San Luis Obispo County, California. The parcel is landlocked with private ownership on all four sides.

Union Asphalt, Inc. (UAI), subsidiary of Hermreck-Willco Assoc. (HWA) has a County-permitted crushed rock operation under lease on the west side of the BLM parcel in Rocky Canyon. HWA is the real proponent of this exchange.

The parcel is mountainous with elevations from about 1,000 feet to 1,700 feet above M.S.L., and is on the west front of the La Panza Range. It is underlain by granitic rocks with about 6 inches to 2 feet of soil.

Drilling and testing show that the parcel contains about 33,500,000 tons of rock reserves suitable for aggregates. The reserve figure reflects mining to a proposed plan that will be submitted to San Luis Obispo County for permitting.

As of the date of this report we consider the highest and best use for the BLM parcel to be for mineral development through a rock quarry. Because of this determination we proceeded to our mineral appraisal. We used a discounted cash flow (DCF) analysis based on economic viability of a rock quarry operation run by UAI, and how much the mineral reserves are presently worth under given legal, technical, economic, and market conditions. Used were projected future annually escalated and depreciable capital costs with a real 10 percent discount rate over 20 project life years (PLY) in order to determine the after tax net present value (NPV). The NPV value was for consideration of 9,430,000 tons of rock reserves risked at 25 percent over the 20 PLY.

On January 24, 1992, we find the FMV of the rock reserves on the 80-acre BLM parcel to be \$478,000.

TABLE T-13. MINERAL APPRAISER QUALIFICATIONS STATEMENT

In each mineral appraisal report, a short statement of the appraiser's qualifications should be made. This means that BLM generated reports as well as those reports generated by outside consultants must have a statement. See the Uniform Appraisal Standards for Federal Land Acquisitions, 1992, p.83. A short statement is key and only the most important types of information should be included.

SAMPLE MINERAL APPRAISER QUALIFICATIONS STATEMENT

NAME AND ADDRESS

Iowe A. Lot
Gettim Quick Corporation
007 Madison Ave., Suite 000
Sacramento, CA 95825

Im R. Good
BLM, CA-920 Minerals
Federal Bldg., 2800 Cottage Way
Sacramento, CA 95825

TITLE

Mining Engineer - Geologist - Economist; plus any informal title

LICENSES AND CERTIFICATES

California Registered Geologist 000 - California Certified Engineering Geologist 000 - BLM Certified Mineral Examiner 000; BLM certified Mineral Reviewer 000

EXPERIENCE

Valuation experience includes geologic, engineering, economic, marketability, feasibility, highest and best use studies, and appraisals on a variety of mineral properties (List 3 recent appraisal projects).

EDUCATION

University of California, Los Angeles, BA Degree in Geological Sciences, 1975

SPECIALIZED TRAINING

Mineral Appraisal Techniques, March 1990
Expert Witness Testimony, January 1991
BLM Appraisal Practice, April 1992

EXPERT WITNESS TESTIMONY

Provided depositions on mineral value and related cases since 1989. Gave testimony at DOI hearings concerning economic evaluation of mineral properties and mining claims.

PROFESSIONAL ASSOCIATIONS

Member, Society for Mining, Metallurgy and Exploration since 1985
Member, Geological Society of America since 1983
Member, American Society of Appraisers; Mines and Quarries Division since 1984

PARTIAL CLIENT LIST (not required for BLM employees)

Goldy Boy Gold Corp.
Slippery Clay Co.
Rackum Up Sand and Gravel Co.
John Smith, Lessor to Hookm Good Limestone Co.
Gypum Gypsum Corp.

PUBLICATIONS

Economic Evaluation of Mining Claims, SME Annual Meeting, 1990
Mine and Quarry Appraisal, Jour. Technical Valuation, Vol. 3, No. 1, 1992

E. REPORT REVIEW

1. INTRODUCTION

The technical reviewer should see that reports are objective, complete, accurate, and clearly and concisely prepared. Thought, care, and hard work must be given to the preparation of a report. Also a reviewer must see that this impression of competency is based on accepted professional standards and insure that the report is in compliance with legal and technical standards, guidance, and procedures. They should insure that the author communicates effectively and in an appropriate tone to the reader.

2. GOALS

Broadly, the goals of a technical reviewer are to assure that:

- Purpose of the report is clearly stated and accomplished.
- Assumptions and limiting conditions are given adequately.
- Certification and qualifications of the mineral appraiser are given.
- Legal, technical, and economic data are accurate, adequate, and support the conclusions and appraised value.
- All supporting documents are included.
- Illustrations, attachments, and tables are appropriate and complete.
- Extraneous material is removed.
- Confidential data is removed from the report and sent by separate cover. Remember, a report must stand alone, and a summary of confidential data may have to be made.
- Overall, the report attends to the items given under V B and C of these Guidelines.

3. TECHNICAL REVIEW AND EDITING

The terms "review" and "edit" are often applied loosely and interchangeably, but really each has a distinct connotation. By established usage, to review a manuscript is to critically evaluate its subject matter and basic organization, whereas the editing of a manuscript, is a later step and consists of correction of grammar and formatting details. First responsibility of the reviewer is to evaluate, but the reviewer should feel free to comment upon grammatical points. The extent to which experienced and objective reviewers should concern

themselves with grammar depends on several factors including 1) the responsibility to help the author improve in writing ability and skills, 2) the extent to which grammatical vagueness clouds the data and conclusions, and 3) the ease with which these notations can be made without distracting the reviewer from his major purpose. In other words, a reviewer is not required to thoroughly edit for grammar but is expected to make the grammatical notations necessary for desirable technical clarity.

4. TECHNICAL REVIEWER/APPRAISER RELATIONSHIP

Technical Reviewers should make helpful, constructive, and appropriate comments with a positive attitude. Remember, the reviewer can be in the role of instructor, and it is part of the role of the reviewer to see that an author becomes a better writer. To this end, the reviewer and the author will benefit by informal discussions before, during, and after the review process.

5. REVIEW TECHNIQUES

a. General

Reviewers should provide a written evaluation with general and specific commentary for corrective measures.

b. Process

Reviewers should first carefully read the entire report to gain a proper perspective. Next, the reviewer should focus on specific areas of concern. Comments should be thorough in extent, clear in explanation and prepared in a positive, appropriate manner. Avoid such comments as "really (?)", "awkward", "not clear", "explain", "expand", "evidence", and so forth because they may lead the author to frustration and resentment. Moreover, these words do not provide any explanation for corrective measures. Comments and suggestions should be written on a copy of the report. An overall summary and explanation of any major deficiencies should be prepared in narrative form on separate pages, hand written if clearly done. Comments and narrative should be sent to the author through appropriate channels. If possible, the reviewer and the author should then come together to discuss matters and their resolutions. If this is not possible, then the author and reviewer must communicate through correspondence and by phone.

c. Specific Instructions

Specific instructions for review of mineral appraisal reports for exchange are given at 43 CFR 2201.3-4.

2210.3-4 Appraisal review.

(a) Appraisal reports shall be reviewed by a qualified review appraiser meeting the qualifications set forth in 2201.3-1 of this part. (See below) Statements of value prepared by agency appraisers are not subject to this review.

(b) The review appraiser shall determine whether the appraisal report:

(1) Is complete, logical, consistent, and supported by a market analysis;

(2) Complies with the standards prescribed in 2201.3-3 of this part; and

(3) Reasonably estimates the probable market value of the lands appraised.

(c) The review appraiser shall prepare a written review report, containing at a minimum:

(1) A description of the review process used;

(2) An explanation of the adequacy, relevance, and reasonableness of the data and methods used by the appraiser to estimate value;

(3) The reviewing appraiser's statement of conclusions regarding the appraiser's estimate of market value; and

(4) A certification by the review appraiser to the following:

(i) The review appraiser has no present or prospective interest in the property that is the subject of the review report; and

(ii) The review appraiser has not, and will not, receive compensation that was contingent on the approval of the appraisal report.

2201.3-1 Appraiser qualifications.

(a) A qualified appraiser(s) shall provide to the authorized officer appraisals estimating the market value of Federal and non-Federal properties involved in an exchange. A qualified appraiser may be an employee or a contractor to the Federal or non-Federal exchange parties. At a minimum, a qualified appraiser shall be an individual, approved by the authorized officer, who is competent, reputable, impartial, and has training and experience in appraising property similar to the property involved in appraisal assignment.

(b) Qualified appraisers shall possess qualifications consistent with State regulatory requirements that meet the intent of title X1 of the Financial Institutions

Reform, Recovery and Enforcement Act of 1989 (FIRREA) (12 U.S.C. 3331) In the event a State does not have approved policies, practices and procedures regulating the activities of appraisers, the Bureau of Land Management may establish appraisal qualification standards commensurate with those adopted by other States meeting the requirements of FIRREA.

d. Resolution of Disputes Regarding FMV

If a difference of opinion arises over the FMV appraisal of a mineral interest, almost always the mineral deposit value, several options are available for the resolution of that difference. Discussions of the matter are put forth in 43 CFR 2201.4.

If the parties cannot agree on the appraised values, they may agree to initiate a process of bargaining or some other process to resolve the the dispute over values. Bargaining or any other process shall be based on an objective analysis of the valuation in the appraisal report(s) and shall be a means of reconciling differences in such reports. Bargaining or another process to determine values may involve one or more of the following actions:

- (i) Submission of the disputed appraisal(s) to another qualified appraiser for review;
- (ii) Request for additional appraisals;
- (iii) Involvement of an impartial third party to facilitate resolution of the value disputes;
- or
- (iv) Use of some other acceptable and commonly recognized practice for resolving value disputes.

Any agreement based upon bargaining shall be in writing and made part of the administrative record of the exchange. Such agreement shall contain a reference to all relevant appraisal information and state how the parties reconciled or compromised appraisal information to arrive at an agreement based on market value.

VI. E FACTORS FOR APPRAISAL PRACTICE

- E-1. We save time, no matter how long it takes!
- E-2. We save money, no matter how much it costs!
- E-3. We will do qualified work, no matter what the qualification of the appraiser!
- E-4. We never have time or money to do an appraisal report right, but we always have time and money to do it over and over and over again!
- E-5. We have what it takes to take what you have!

- E-6. We as a group can make mistakes, but no individual is ever wrong.
- E-7. We have doubts so we talk convincingly; we get in trouble we delegate!
- E-8. We do it the hard way, because its always easier!

VII. SELECTED REFERENCES

Borne, H. L., 1989, Mineral Royalties; Society for Mining, Metallurgy, and Exploration, Inc., Preprint no. 89-176, p. 1.

Boyle, H.F., Jr., and Schenck, G.K., 1985, Investment Analysis: U.S. Oil and Gas Producers Core High in University Survey; Society of Petroleum Engineers, Journal of Petroleum Technology, April, p.680-690.

California State Tax Handbook; Prentice Hall Information Service, Paramus, N.J., published annually.

California Assessors' Handbook, Section 560 - Assessment of Mining Properties, March 1997, 10 sections with appendices.

Evans, J. R., 1987, Mineral Appraisal for a Competitive Lease of Sand and Gravel and Placer Gold at Mississippi Bar, Near Folsom, Sacramento County, California; BLM Mineral Report, 146 p. plus attachments.

Evans, J. R., 1988, Mineral Trespass Appraisal for Yuba Natural Resources, Inc's Sand and Gravel and Placer Gold Deposits, and Yuba Silica's, Inc's Silica Deposit, near Hammanton, Yuba County, California; BLM Mineral Report, 107 p. plus attachments

Evans, J. R., 1992, Mineral Appraisal for The BLM Rocky Canyon 80-Acre Exchange Parcel, San Luis Obispo County, California; BLM Mineral Report, 57 p. plus attachments.

Evans, J. R., 1993, Economic Evaluations for Validity On Mining Claims; Society for Mining, Metallurgy, and Exploration Inc. Preprint 93-27, 15p.

Federal Tax Handbook; Prentice Hall Information Service, Paramus, N.J., published annually.

Garb, F.A., 1985, Oil and Gas Reserves Classification, Estimation, and Evaluation; Society of Petroleum Engineers, Journal of Petroleum Technology, March, p.373-390.

Garb, F.A., 1988, Assessing Risk in Estimating Hydrocarbon Reserves and in Evaluating Hydrocarbon - Producing Properties; Society of Petroleum Engineers, Journal of Petroleum Technology, June, p.765-778.

Garb, F.A., 1990, Which Fair-Market-Value method should you use?; Society of Petroleum Engineers, Journal of Petroleum Technology, January, p.8-17.

Gentry, D.W., and O'Neil, T.V., 1984, Mine Investment Analysis; Society of Mining Engineers, New York, N.Y., 502p.

Getting Your Ideas Across Through Writing; 1950, Div. Personnel Management, Staff Development Branch, Superintendent of Documents, U.S. Government Printing Office, 44p.

Gustavson, J.B., and Murphy, 1989, Society of Petroleum Engineers Paper SPE 18905 presented at the SPE Hydrocarbon Economics and Evaluation Symposium, Dallas, Texas, March 9-10, p.33-44.

Harben, P., and Purdy, J., February 1991, Dimension stone evaluation from cradle to gravestone; Industrial Minerals Magazine, p.47-61

Hughes, R.V., 1978 Oil Property Evaluation; R.E. Krieger Pub. Co., N.Y., 331p.

Kestin, Joseph, March 1980, ed-in-chief, Sourcebook on the production of electricity from geothermal steam; U.S. Dept. of Energy, Superintendent of Documents, U.S. Government Printing Office, 997p.

Lewis, B.C., and Moran, B.C., January 1990, Limestone Mining: Reserves and valuation; Mining Engineering Magazine, p. 112-116.

Royal Bank of Canada - The Royal Bank Letter, 1981, The Practical Writer; Jan/Feb, vol.62 No.1, 2p.

Society for Mining, Metallurgy, and Exploration, Inc. SME Mining Engineering Handbook, 2nd ed., vol.1, 1992.

Chapter 2.4, Taxation and Depletion by J.W. Whitney and G. H. Sibbald, p.89-95.

Chapter 2.5, Investment Strategy for Mining Projects by Dennis Arrouet, p. 96-101.

Chapter 6.0, Mine Evaluation and Investment Analysis-Introduction by D. W. Gentry, p.387-389.

Chapter 6.1, Mine Valuation by D. W. Gentry and T.J. O'Neil, p.393-409.

Chapter 6.2, Mine Feasibility Studies by D.W. Gentry and T.J. O'Neil, p.393-404.

Chapter 6.4, Project Operating Strategy by D.D. Haas, p.425-451.

Chapter 6.5, Investment Analysis by T. J. O'Neil and D. W. Gentry, p.452-469.

Chapter 6.6 Mine Financing by C.R Tinsley, p.470-481.

Stermole, F.V., and Stermole, J.M., 1996, Economic Evaluation and Investment Decision Methods, 9th ed.; Investment Evaluation Corp., Golden, Colo. p.692.

Tingsley, H.V.S., January 1990, Using Business "Due Diligence" to Help Evaluate Minerals Deposits; Mining Engineering Magazine, p.35-36.

Uniform Appraisal Standards for Federal Land Acquisitions, 1992; Superintendent of Documents, U.S. Government Printing Office, 132p.

Verner, W.J., December 1986, Putting a Price on Mineral Reserves; Pit and Quarry Magazine, p.50-54.

GUIDELINE FOR EXAMINATION OF AGGREGATE OPERATIONS
By J. R. Evans, 1994

I. GENERAL DATA

- A. Name of Mining Firm, Deposit and/or Plant
- B. Location
- C. Company Management Staff and/or Field Staff Names
- D. Investigator
- E. Date of Field and/or Office Visit
- F. Sources of Data

II. OWNERSHIP DATA

- A. Private or Government Land
 - 1. Ownership of Land
 - 2. Amount of Land
 - 3. How Long Held
 - 4. Maps Showing Location With Legal Descriptions
- B. Leased Land
 - 1. Ownership
 - 2. Amount of Land Leased
 - 3. How Long Held
 - 4. Map Showing Location With Legal Descriptions
 - 5. Royalty Payment Situation
 - a. To Whom
 - b. For How Long
 - c. Rate Per Ton, or Yard, or % Gross
 - d. Up-front Payments Total \$ Per Year Paid, and Total \$ Paid To Date

III. HISTORY OF OPERATION, PRODUCTION, AND MARKETING DATA

- A. Date of First Extraction, Mining, or Processing
 - 1. Operations; Continuous, Discontinuous, Since Inception
 - 2. Reasons for Discontinuations
- B. Production
 - 1. Total Production by Year
 - 2. By Product Sold
 - a. Concrete Aggregates
 - b. Asphaltic Concrete Aggregates
 - c. Base Materials
 - d. Riprap
 - e. Railroad Ballast
 - f. Soil Cement
 - g. Fill
 - h. Other
 - 3. Rate of Yearly Production
 - a. Present Rate
 - b. Average Past 5 and 10 Year Periods
 - c. Maximum Possible Production
 - d. Years of Deposit Life Left Based on Present Rate of Extraction and 5 and 10 Year Rates of Extraction
- C. Pitside (i.e.b.) Prices per Ton for Each Material Sold
- D. Imports-Exports Across County or State Lines
 - 1. Amount
 - a. Type of Material
 - b. From Where to Where
 - c. For How Long
 - d. Costs

E. Transportation

- 1. Types Used: Truck, Rail, Barge, or Combination of
- 2. Company vs. Contract Hauling
- 3. Costs per Ton Mile for Haulage
 - a. PUC Rates if Applicable
 - 1) Production Areas and Numbers
 - 2) Delivery Zones and Numbers
- 4. Miscellaneous Related Transportation Costs Such as Loading and Unloading

F. Location, Ownership, of Concrete Batch and Asphaltic Batch Plants that Use Materials from this Operation

IV. GEOLOGY AND QUALITY CONTROL

A. Geological Formation, Member, or Unit

- 1. Name
- 2. Age/Fossils, and so forth
- 3. Areal Distribution
- 4. Type Area, Section, or Locality

B. Type of Deposit

- 1. Origin (Except for Slags, and Ashes)
 - a. Floodplain, Alluvial Fan, Steam Channel, Steam Terrace, Talus, Dredge Tailings, Mine Tailings, Bedrock, Marine Terrace, Glacial, Beach, Offshore Marine, Sand Dune
- 2. Conditions of Deposits
- 3. Source Areas
- 4. Shape of Basin of Deposition
- 5. Paths of Material Into Basins of Deposition

C. Geohazards

- 1. Earthquakes
- 2. Ground Motion
- 3. Active Fault Zone
- 4. Slope Failure
- 5. Flood Probability

D. Topographic Expression

- 1. Type of Topographic Expression
 - a. Hills, Bluffs, Rolling, etc.
- 2. Relief, and Natural Slope Angle
- 3. Drainage, Topo and Style
- 4. Quality and Amount of Exposure of Outcrops
- 5. Weathering Features
- 6. Erosion Features
- 7. Vegetation Type and Amount

E. Geological Contact Relations

- 1. Relation to Adjacent Rock Units
 - a. Deposited, Intrusive, Extrusive
- 2. Nature and Type of Geological Contacts
 - a. Faulted, Alteration Zones, Grain Size at Margins of Contact Zone, Assimilation, Stoping, Brecciation, Evidence of Forceful Injection
- 3. Facies Changes

F. Bulk Properties

1. Type of Bedding; Massive, Thick, Thin, and So Forth
2. Overall Attitude and Variations in Attitude of Bedding
3. Weathering, Mineral and Rock Alteration, Presence of Other Rocks not Useable
4. Thickness of Deposit, Length and Variations in General Shape; Stock, Dike, Wedge, Lense, Veins, and So Forth
5. Structural Features; Differentiation, Faulted, Folded, and So Forth
6. Smaller Scale Structures
 - a. Primary -- such as Stratification, Cross-Bedding, Ripple Marks, Scour, Flow, Foliation, Linear, Layered, Massive, and So Forth
 - b. Secondary -- such as Fissility, Fractures, Joints, Cleavage, Concretions, Modules, Disrupted Bedding, Slump, Clastic Dykes, Veinlets, Gouge Zones, and So Forth
 - c. Describe Form, Color, Dimension, Development, Distribution, Orientation, Boundary Conditions, Style, Attitude, Shape, Spacing, Regularity, Relative Ages
7. Porosity (Estimated or Actual Percent Pore Space)
8. Permeability -- High, Intermediate, Low
9. Specific Gravity
10. Weight per Cubic Foot and Yard; Average, Variations in

G. Petrology

1. Color, and Distribution of Color
 - a. Fresh and Weathered Surfaces
 - b. Processed Product
 - c. Give Color Index if Igneous or Metamorphic Rock (Percent of Dark Minerals)
2. Induration
 - a. How Well Indurated
 - b. Cementing Agent
 - c. Desirable Joint and/or Cleavage Pattern and Relation to Rock Breakage on Blasting
3. Texture
 - a. Grading (Grain Size, Average and Range) -- use Wentworth, and or Commercial Scales
 - b. Sorting
 - 1) Amount of Volume of Coarse Fraction -- Pebble, Cobble, and Boulder
 - 2) Amount by Volume of Fine Fraction -- Granule and Smaller, Specify Clay Fraction
 - 3) Ratio of Coarse to Fine Fraction (+4 Mesh/-4 Mesh)
 - 4) Very Well, Well, Moderately, Poorly, or Very Poorly Sorted
 - c. Sphericity of Fragments (Disk, Spherical, Bladed, Roller)
 - d. Roundness of Fragments (Very Angular, Angular, Subangular, Subrounded, Rounded, Well Rounded)
 - e. Surface Luster and Relief of Fragments
 - f. For Intrusive, Metamorphic, and Volcanic Rocks Give Simple Textural Names, Rely on Description of Outcrops or Faces -- Vesicular, Amygdaloidal, Graphic Inclusions, Pyroclastic, Cataclastic, Mylonitic, Schistosity, Gneissic, and So Forth

ATTACHMENT 1B

4. Composition

a. Minerals, Types and Amount

- 1) Grain Size; Average and Range
- 2) Grain Shape; Equant, Tabular, Pismatic, Lath-like Irregular, Rod or Needle-like, Asbestosform, Micaceous, and So Forth
- 3) Grain Zoning or Inclusions

b. Rocks, Types and Amount

- c. Bulk Rock Chemistry, and/or Mineral Chemistry
- d. Organic Matter and/or Encrustations
- e. Alteration Products of Minerals/Rocks
- f. Rock Classification

H. Quality Control for Processed Material

1. Aggregate Test Results

- a) Mechanical Analysis
- b) Los Angeles Abrasion
- c) Petrographic Analysis
- d) Specific Gravity and Absorption of Coarse and Fine Materials
- e) Unit Weight
- f) Sand Equivalent
- g) Durability
- h) Cleanness
- i) Soundness
- j) Percent Crushed Particles
- k) Organic Impurities
- l) Compaction
- m) Alkali Reactivity
- n) Chemical Composition
- o) Mineral Composition (Presence of "Asbestos", Particularly)

2. Reactive Rocks or Materials

3. Specifications Required for Processed Material: By Whom

V. RESERVES AND RESOURCES

A. Tonnage and How Determined; Separate In-the-ground, from Recoverable, give Tonnage Under Plant Site Separately -- Give Tonnage Factor and How Determined; Use Maps and Sketches -- Show Methodology Clearly, Plus All Data

1. Property Lines with Plots of Extraction Areas
2. Setbacks
3. Pit Slope Requirements
4. Maximum Pit Depth Permitted
5. Present Pit or Extraction Area Configuration, plus Projected Configuration at End of Extraction
6. Nature Pit Bottom
7. Position and Variation in Ground Water Surface
8. Amount of Overburden, Average Thickness, and Variation in (stripping ratio)
9. Percent of Waste during Mining and After Stripping
10. Amount of Waste Remaining, and How Distributed

VI. EXTRACTION AND PROCESSING

A. Extraction Methodology and Character of Extraction Areas

1. Type of Mining Operation
2. Equipment Used in Mining
3. Blasting Techniques
4. Describe Extraction Area, Present and Ultimate Size
5. Stripping Ratio (Tons/Tons)

B. Processing Plant

1. Flow Sheets
2. Rated Capacity
3. Days and Hours of Operation
4. Production Costs, and Cost per Ton of Material
5. Original Capital Costs

C. Describe Concrete Batch Plants and Asphaltic Concrete Batch Plants

D. Roads (In and Out)

E. Access to Freeways or Railroads, or Rivers

VII. LAND AND WATER USE

A. Zoning Restriction and Code Numbers (Attach to Report)

B. Land Use Permits, Bonds, and Code Numbers (Attach to Report)

C. Mine Reclamation Plans, and Costs of Related Problems

1. Ultimate Uses of Reclaimed Land

- a) Appropriate Maps and Sketches

D. Stripping Wastes and Tailings Disposal

1. Amount
2. Where
3. Storage
4. Compacted or Loose
5. Problems Related To

E. Water Use

1. Source; Location
2. Amount
3. Costs

F. Waste Water Disposal

1. Settling Basins

- a) Number
- b) Size
- c) Amount of Water Reused

2. Other Methods of Waste Water Disposal

- a. Amount
- b. Manner
- c. Type

3. Waste Water Discharge Requirements (Attach to Report)

VIII. Environmental Considerations

A. Noise and Vibration Control

B. Air Pollution Control

C. Dust Control

E. Setbacks

F. Fencing

G. Hour of Legal Operation

H. Insurance

I. Main Highways or Freeways Used

J. In and Out Roads and Traffic Safety

K. Off Street Parking

L. Signs Posted

M. Beautification

1. Appearance
2. Screening Effect

N. Other

- IX. HEALTH AND SAFETY REGULATIONS**
 - A. Discuss any Special Problems at the Plants or Extraction Area**
- X. SPECIFIC ECONOMIC DATA (SEE GUIDELINES TEXT FOR DETAILED INFORMATION NEEDED)**
 - A. Employee Totals**
 - 1. Mining and Processing
 - 2. Supervision and Administration
 - 3. Total Annual Payroll
 - B. Taxes Paid**
 - 1. County
 - 2. City
 - 3. State
 - 4. Federal
 - C. Place in Local Economy**
 - D. Current Assessed Valuation of Buildings and Equipment and Land**
- XI. CONCLUSIONS AND RECOMMENDATIONS**
- XII. REFERENCES**
- XIII. ATTACHMENTS**
 - A. Maps**
 - B. Flowsheets**
 - C. Photographs**
 - D. Tables**
 - E. Published Articles**
- XIV. GENERAL LAND USE AND ECONOMIC DATA**
 - A. Maps Showing Areas Zoned for Aggregate Extraction**
 - B. Requirements for Zoning and Safety Ordinances for County, City, State and Federal**
 - C. Brief History of Zoning and Permit Problems**
 - D. Population Figures 1980 to Present and Projected to 2000; also Population Growth Rate (by County or City)**
 - E. Total Value of Building Permits, Engineering Construction, and Total Construction 1980 to Present in Current Dollar Values**
 - F. Area Growth Maps**
 - G. Other Significant Information**

Group 3600—Mineral Materials
Disposal

NOTE: The information collection requirements contained in parts 3600, 3610 and 3620 have been approved by the Office of Management and Budget under 44 U.S.C. 3501 et seq. and assigned clearance number 1004-0103. The information is being collected to allow the authorized officer to determine if the applicant is qualified to purchase or have free use of mineral materials on the public lands. The obligation to respond is required to obtain a benefit.

PART 3600—MINERAL MATERIALS
DISPOSAL: GENERAL

Subpart 3600—General

- Sec. 3600.0-1 Purpose.
3600.0-3 Authority.
3600.0-4 Policy.
3600.0-5 Definitions.

Subpart 3601—Limitations

- 3601.1 Limitations; disposal of mineral materials.
3601.1-1 Valid existing rights and unpatented mining claims.
3601.1-2 Authorization to use lands subject to material sales contracts and free use permits.
3601.1-3 Environmental protection and planning.

Subpart 3602—Disposal of Mineral Materials: General

- 3602.1 Mining and reclamation plans.
3602.1-1 Mining plans.
3602.1-2 Reclamation plans.
3602.1-3 Approval and modification of mining and reclamation plans.
3602.2 Sampling and testing.
3602.3 Removal of improvements.

Subpart 3603—Unauthorized Use

- 3603.1 Unauthorized use.

Subpart 3604—Community Pits and Common Use Areas

- 3604.1 Non-exclusive disposal.
3604.2 Reclamation.
SOURCE: 48 FR 27011, June 10, 1983, unless otherwise noted.

Subpart 3600—General

§ 3600.0-1 Purpose.

The regulations in this part establish procedures for the exploration, development and disposal of mineral material resources as well as the protection of the environment of the public lands under permit or contract for sale or free use.

§ 3600.0-3 Authority.

(a) The Act of July 31, 1947, as amended (30 U.S.C. 601 et seq.) provides:

(1) Authority for the disposal of mineral materials including, but not limited to, petrified wood and common varieties of sand, stone, gravel, pumice, pumilite, cinders and clay, in the public lands of the United States, and from lands on which the mineral rights have been reserved to the United States, if the disposal of these materials (1) is not otherwise expressly authorized by law, including, but not limited to the Act of June 28, 1934, as amended (43 U.S.C. 315 et seq.) and the United States mining laws, (ii) is not expressly prohibited by the laws of the United States, and (iii) would not be detrimental to the public interest.

(2) That where the lands have been withdrawn in aid of a function of a Federal department or agency other than the Department of the Interior, or of a State, or other local governmental subdivision or agency, the Secretary of the Interior may make disposals under the regulations in this part only with the consent of such Federal department or agency or of such State or local governmental unit;

(3) That disposal of mineral materials under the Materials Act may not be made from any lands in any national park or national monument or from any Indian lands or lands set aside or held for the use or benefit of Indians including lands over which jurisdiction has been transferred to the Department of the Interior by Executive order for the use of Indians.

(4) Authority for the Secretary of the Interior, in his discretion to permit the free use of mineral materials by any Federal or State government agency, unit or subdivision, including municipalities, or any nonprofit association or corporation. The Materials Act does not permit these materials to be used for commercial or industrial purposes, resale or barter.

(b) Section 302 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1732) directs the Secretary:

(1) To manage public lands under the principles of multiple use and sustained yield in accordance with the land use plans developed under the Act (see subpart 1601 of this title).

(2) To regulate, through easements, permits, leases, licenses, published rules or other instruments deemed appropriate, the use, occupancy and development of public lands.

(3) To prevent unnecessary and undue degradation of the public lands.

(c) Section 2 of the Act of September 28, 1962 (76 Stat. 652) requires the Secretary of the Interior to provide by regulation that limited quantities of petrified wood may be removed without charges from public lands which he shall specify. Section 2 of the above Act applies to the same public lands as the Act of July 31, 1947, as amended (30 U.S.C. 601, 602). Specifically excluded are lands in any national park, or national monument, or any Indian lands.

(d) Section 304(b) of the Federal Land Policy and Management Act of 1975 (43 U.S.C. 1734) and the Independent Offices Appropriations Act of 1952 (31 U.S.C. 483a) provide authorities for the collection of fees and the reimbursement of costs by the government.

§ 3600.0-4 Policy.

It is the policy of the Bureau of Land Management to permit the disposal of mineral material resources under the Bureau's jurisdiction at fair market value while ensuring that adequate measures are taken to protect the environment and minimize damage to public health and safety during the authorized exploration for and the removal of such minerals. No mineral material shall be disposed of if the Secretary determines that the aggregate damage to public lands and resources would exceed the benefits to be derived from the proposed sale or free use.

§ 3600.0-5 Definitions.

As used in this group, the term:

(a) *Bureau* means Bureau of Land Management, Department of the Interior.

(b) *Director* means the Director of the Bureau of Land Management.

(c) *Permittee* means any person, corporation, partnership and association, Federal, or State agency, unit, or subdivision, including municipalities, and non-profit organization or corporation or other entity that has been issued a contract or a free-use permit for the removal of mineral materials from the public lands.

(d) *Authorized officer* means any employee of the Bureau of Land Management who has been delegated the authority to perform the duties described in this part.

(e) *Mineral material* includes, but is not limited to, common varieties of sand, stone, gravel, pumice, pumilite, cinders, clay and other mineral materials and petrified wood.

(f) *Public lands* means any lands and interest in lands owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management without regard to how the United States acquired ownership, except lands held for the benefit of Indians, Aleuts, and Eskimos.

(g) *Community pit* means a site from which nonexclusive disposals of mineral materials can be made. The establishment of a community pit, when noted on the appropriate Bureau of

Land Management records or posted on the ground, constitutes a superior right to remove material as against any subsequent claim or entry of the lands.

(h) *Common use area* means a generally broad geographic area from which nonexclusive disposals of mineral materials can be made, with only negligible surface disturbance. The establishment of a common use area does not create a superior right to remove material as against any subsequent claim or entry of the lands.

(i) *Performance bond* means a bond to ensure compliance with the terms of the contract and reclamation of the site as required by the authorized officer.

(j) *Act* means the Material Act of July 31, 1947, as amended, (30 U.S.C. 601, et seq.).

(k) *Unnecessary or undue degradation* means surface disturbance greater than what would normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operations of similar character and taking into consideration the effects of operations on other resources and land uses, including those resources and uses outside the area of operations. Unnecessary and undue degradation may involve failure to initiate and complete reasonable mitigation measures, including reclamation of disturbed area; creation of a nuisance; or failure to comply with applicable environmental protection statutes and regulations.

Subpart 3601—Limitations

§ 3601.1 Limitations; disposal of mineral materials.

§ 3601.1-1 Valid existing rights and unpatented mining claims.

(a) Mineral material disposals may not be made by the authorized officer from public lands where:

- (1) There are any unpatented mining claims which have not been cancelled by appropriate legal proceeding;
- (2) Expressly prohibited by law.

§3601.1-2 Authorization to use lands subject to material sales contracts and free use permits.

(a) The permittee under contract of sale or permit for free use shall, unless otherwise provided, have the right to:

(1) Extract, remove, process and stockpile the material until the termination of the contract regardless of any subsequent appropriation under the provisions of the general land laws; and

(2) Use and occupy the described lands if it is determined by the authorized officer to be necessary for fulfillment of the contract until termination of that contract.

(b) The permittee shall be subject to the continuing rights of the United States to issue leases, permits and licenses for the use and occupancy of the lands, provided that this authorized use does not endanger or materially interfere with the production or removal of materials under contract.

(c) Any person that has a subsequent settlement, location, lease, sale or other appropriation under the general land laws, including the mineral leasing and mining law on lands covered by a material sale contract or free use permit shall be subject to the existing use authorization.

§3601.1-3 Environmental protection and planning.

The authorized officer shall not dispose of mineral material under this part where he/she determines that the proposed operation will cause unnecessary or undue degradation. Upon receipt of an application for sale or free use of mineral materials, the authorized officer shall complete an environmental review to ensure that unnecessary or undue degradation is prevented. Disposal actions which are categorically excluded from the NEPA process can be found in the Departmental manual. See 516 DM 6, Appendix 5. Decisions to authorize the disposal of mineral materials shall conform to approved land use plans, when available, in accordance with §1610.5-3 of this title.

Subpart 3602—Disposal of Mineral Materials: General

§3602.1 Mining and reclamation plans.

The applicant to submit mining and reclamation plans prior to environmental review or issuance of a contract or permit. The mining plan and reclamation plan may be combined into one document.

§3602.1-1 Mining plans.

The applicant, when required by the authorized officer, shall prepare a mining plan that includes, but is not limited to:

(a) A map, sketch or aerial photograph showing the area applied for, the area to be disturbed, existing and proposed access and the names and locations of major topographic and known cultural features;

(b) A description of the proposed methods of operation and the periods during which the proposed activities will take place;

(c) A description of measures to be taken to prevent hazards to public health and safety and to prevent unnecessary and undue degradation.

§3602.1-2 Reclamation plans.

The applicant, when required by the authorized officer, shall submit a reclamation plan that includes, but is not limited to:

(a) A statement of the proposed manner and time for completion of the reclamation of the areas disturbed by the permittee's operations;

(b) A map or sketch which delineates the location and area to be reclaimed.

§3602.1-3 Approval and modification of mining and reclamation plans.

(a) Upon review of the mining and reclamation plans, the authorized officer shall promptly notify the applicant of any deficiencies in the plan and of changes needed to prevent undue and unnecessary degradation of the lands, and hazards to public health and safety. Necessary changes shall be made as agreed by the authorized officer and the applicant.

(b) The permittee's operation shall not deviate from the plan approved by the authorized officer.

(c) An approved mining or reclamation plan may be modified by mutual agreement of the authorized officer and permittee at any time to adjust to changed conditions, or correct any oversight potentially resulting in undue or unnecessary degradation. Any change shall be consistent with the requirements under §3601.1-3 of this title.

(d) The authorized officer shall review the proposed plan modification and within 30 days notify the permittee of its approval or needed changes.

§3602.2 Sampling and testing.

(a) Sampling and testing of mineral materials may be done pursuant to a letter of authorization issued by the authorized officer. These activities may be authorized prior to issuance of a sales contract or free use permit. The permittee shall submit his findings to the authorized officer. Information and data submitted and specifically identified by the permittee as containing trade secrets or confidential or privileged commercial or financial information shall not be available for public examination in accordance with the provisions of the Freedom of Information Act. A determination concerning information which may be withheld from public examination shall be made in accordance with the rules in 43 CFR part 2.

(b) A letter of authorization to sample and test mineral materials does not give the applicant a preference right to a sales contract or free use permit.

(c) The authorized officer may impose bonding and reclamation requirements on sampling and testing activities conducted pursuant to a letter of authorization.

§3602.3 Removal of improvements.

After the permit period expires, the authorized officer may grant the permittee no more than 90 days, excluding periods of inclement weather, to remove the equipment, personal property and any other improvements placed on the public lands by the permittee. Improvements such as roads, culverts and bridges may remain in place with the consent of the authorized officer. If the permittee fails to remove such equipment, personal property or any other improvements, they shall become the

property of the United States but the permittee shall remain liable for the cost of removal of such equipment, personal property and any other improvements and for restoration of the site.

Subpart 3603—Unauthorized Use

§3603.1 Unauthorized use.

Except when authorized by sale or permit under law and the regulations of the Department of the Interior, the extraction, severance or removal of mineral materials from public lands under the jurisdiction of the Department of the Interior is unauthorized use. Unauthorized users shall be liable for damages to the United States, and shall be subject to prosecution for such unlawful acts (see subpart 9239 of this title).

Subpart 3604—Community Pits and Common Use Areas

§3604.1 Non-exclusive disposal.

(a) Non-exclusive mineral material sales and free use under permit may be made from the same deposit within areas designated by the authorized officer, and consistent with other provisions under this part. These designated community pit sites or common use areas are not limited in size.

(b) The designation of a community pit site constitutes a superior right to remove the material as against any subsequent claim or entry of the lands.

(c) The designation of a common use area does not establish a superior right to remove the material as against any subsequent claim or entry of the land; however, a person authorized by permit or sale to remove mineral materials from a common use area has a superior right to remove the material as against any subsequent claim or entry on the lands.

(d) Sales from community pit sites or common use areas shall be made at fair market value. No mining or reclamation plan shall be required, but the permittee shall comply with the terms of the contract or permit to protect health and safety and prevent undue or unnecessary degradation of the public lands.

§ 3604.2 Reclamation.

(a) Permits or contracts for the extraction of mineral materials from community pits or common use areas shall not require reclamation but shall require payment of costs of reclamation, as provided in paragraph (b) of this section. However, the authorized officer may allow qualified permittees to perform interim or final reclamation, where needed, in lieu of paying reclamation charges.

(b) The reimbursement cost of reclamation shall be a proportionate share of the total estimated cost of reclamation, determined by using a ratio of the material extracted under the permit or contract to the total estimated volume of the material to be extracted from the site.

PART 3610—SALES

Subpart 3610—Mineral Material Sales

Sec.

- 3610.1 Procedures: General.
- 3610.1-1 Request for sale.
- 3610.1-2 Appraisal, reappraisal and measurements.
- 3610.1-3 Payments and termination by agreement.
- 3610.1-4 Refunds or credits.
- 3610.1-5 Performance and reclamation bonds.
- 3610.1-6 Assignments.
- 3610.1-7 Extension of time.
- 3610.2 Noncompetitive sales.
- 3610.2-1 Limitations in volume.
- 3610.2-2 Government programs.
- 3610.2-3 Federal mineral leases.
- 3610.2-4 Term of contract.
- 3610.3 Competitive sales.
- 3610.3-1 General.
- 3610.3-2 Advertising.
- 3610.3-3 Conduct of sales.
- 3610.3-4 Bid deposits.
- 3610.3-5 Contracts.
- 3610.3-6 Term of contract.

AUTHORITY: Minerals Management Act of July 31, 1947, as amended (30 U.S.C. 601, 602).

SOURCE: 48 FR 27013, June 10, 1983, unless otherwise noted.

Subpart 3610—Mineral Material Sales

§ 3610.1 Procedures: General.

§ 3610.1-1 Request for sale.

Under the provisions of this part, the authorized officer may sell mineral

materials upon receipt of a written request by any person who expresses an interest in mineral materials; or his own initiative.

§ 3610.1-2 Appraisal, reappraisal and measurements.

(a) No mineral materials shall be sold at less than fair market value as determined by appraisal.

(b) The authorized officer shall reappraise mineral materials disposed of under this part at intervals of not less than 2 years and shall adjust the contract unit price accordingly.

(c) Mineral materials may be measured by in-place volume or weight equivalent.

§ 3610.1-3 Payments and termination by agreement.

(a) Under a contract of sale for mineral materials, the permittee:

(1) Shall not remove mineral materials until advance payment is made;

(2) Shall for contract sales of \$2,000 or less, pay the full amount at execution of the contract;

(3) May, when the sale exceeds \$2,000, make installment payments of not less than \$500 or 10 percent of the total purchase price, whichever is greater and shall: (i) For non-competitive sales, pay the first installment prior to or at the time the contract is awarded; (ii) for competitive sales, pay the first installment as a deposit at the time the bid is submitted, and (iii) pay each subsequent installment for non-competitive and competitive sales in an amount equal to the value of the mineral material removed prior to removal of the material;

(4) Shall pay the total amount of the purchase price no later than 60 days before the expiration date of the contract;

(5) Shall annually produce an amount sufficient to pay to the United States a sum of money equal to the first installment, or in lieu of such production, shall make an annual payment in the amount of the first installment. Annual payments shall be due on or before the anniversary date of the execution of the contract;

(6) Shall forfeit all monies paid when the required payments under the terms and conditions of the contract are not

met. Failure to comply with the terms and conditions for payment shall constitute a breach of contract and the authorized officer may terminate the contract;

(7) Shall be required to make an annual report of production under the contract and to provide written verification of the amount of mineral materials removed upon request by the authorized officer to allow verification of payments.

(b) The permittee and the authorized officer may, by agreement, terminate the contract of sale at any time.

§ 3610.1-4 Refunds or credits.

(a) Refunds or credits may be made to the permittee:

(1) If upon expiration total payments made exceed the total value of mineral materials covered by the contract;

(2) If it is determined by the authorized officer that insufficient mineral materials existed in the sales area to fulfill the terms of the contract; or

(3) If materials paid for are unavailable as a result of termination of a contract, as provided in § 3610.1-3(b) of this title.

(b) Refunds of credits may not be made where the total payment made by a permittee does not exceed the administrative cost of processing the disposal action.

(c) Payments made in lieu of production, as provided in § 3610.1-3(a)(6), may be credited to future production, but not refunded, unless upon expiration, the total value of payments made exceeds the total value of mineral materials covered by the contract. Payments made in lieu of production prior to termination or relinquishment of contract will not be refunded.

§ 3610.1-5 Performance and reclamation bonds.

(a) The authorized officer shall require a performance bond of not less than \$500 or 20 percent of the total contract value, whichever is greater, for contracts of \$2,000 or more, except for community pits when a reclamation fee is paid by the permittee.

(b) The authorized officer may require a reclamation or performance bond for contract sales of less than

\$2,000, but in no event shall the bond be for more than 20 percent of the total contract value.

(c) A performance and reclamation bond may be:

(1) Bond of a corporate surety shown on the approved list issued by the U.S. Treasury Department;

(2) Cash bond, with a power of attorney to the Secretary to convert such cash upon default in the performance of the terms and conditions of the contract or permit; or

(3) Negotiable Treasury bond of the United States of a par value equal to the amount of required bond, together with a power of attorney to the Secretary to sell such securities upon default.

§ 3610.1-6 Assignments.

(a) The permittee may not assign the contract, permit or any interest therein without the written approval of the authorized officer. The authorized officer shall ensure that all terms and conditions agreed upon are contained in the assignment and are assumed by the assignee.

(b) The authorized officer shall not approve any proposed assignments involving contract performances unless the assignee furnishes a performance bond as required by § 3610.1-5 of this title or obtains a written commitment from the previous surety to be bound by the assignment when approved.

(c) Upon approval of an assignment by the authorized officer, the assignee shall be entitled to all the rights and be subject to all the obligations under the contract, and the permittee shall be released from any further liability under the contract.

§ 3610.1-7 Extension of time.

The authorized officer may grant a one-time extension not to exceed 1 year, if the permittee:

(a) Submits a written request that is received by the authorized officer no later than 30 days or earlier than 90 days prior to the expiration date of the contract; and

(b) Shows, in writing that the delay in removal of the mineral materials was due to causes beyond the control of and without fault or negligence of the permittee.

§ 3610.2 Noncompetitive sales.

§ 3610.2-1 Limitations in volume.

(a) When it is determined to be in the public interest, and where it is impracticable to obtain competition, the authorized officer may sell at not less than fair market value, without advertising or calling for bids, mineral materials not to exceed 100,000 cubic yards (or weight equivalent) in any individual sale.

(b) The authorized officer shall not approve noncompetitive sales that exceed the total aggregate of 200,000 cubic yards (or weight equivalent) made in any one State for the benefit of any one individual, partnership, corporation or entity in any period of twelve consecutive calendar months.

(c) The volume limitations in paragraphs (a) and (b) of this section shall not apply to sales in the State of Alaska of mineral materials which the authorized officer determines are needed for construction, operation, maintenance or termination of the Trans-Alaska Pipelines System or the Alaska Natural Gas Transportation System.

(d) The volume limitations contained in paragraphs (a) and (b) of this section shall not apply where the Director determines that circumstances make it impossible to obtain competition or where, because of an emergency situation affecting public property, health and safety, there is insufficient time to invite competitive bids.

[48 FR 27013, June 10, 1983, as amended at 61 FR 22079, June 18, 1996]

§ 3610.2-2 Government programs.

The authorized officer may sell mineral materials not exceeding 200,000 cubic yards (or weight equivalent) at not less than fair market value without advertising or calling for bids when:

(a) The authorized officer determines the sale to be in the public interest; and

(b) The materials are to be used in connection with a public works improvement program that requires urgent attention on behalf of a Federal, State or local governmental agency and that does not permit time required for advertising.

§ 3610.2-3 Federal mineral leases.

Where the materials are to be used in connection with the development of public lands under a mineral lease issued by the United States, the authorized officer may without calling for competitive bids, sell a volume of mineral materials not to exceed 200,000 cubic yards (or weight equivalent) to any one permittee in one State in any calendar year. No charge shall be made for mineral materials necessarily moved in the process of extracting minerals under Federal lease, as long as the materials remain within the boundaries of the lease and are used for lease development.

§ 3610.2-4 Term of contract.

The term for noncompetitive contracts for the sale of mineral materials shall not exceed 5 years, excluding extension and removal periods.

§ 3610.3 Competitive sales.

§ 3610.3-1 General.

(a) The authorized officer shall make sales, except those specified in subpart 3604 and § 3610.2 of this title, only after inviting competitive bids through publication and posting in conformance with § 3610.3 of this title.

(b) The authorized officer shall not hold sales sooner than 1 week after the last advertisement inviting competitive bids.

§ 3610.3-2 Advertising.

(a) When offering mineral materials for sale by competitive bidding, the authorized officer:

(1) Shall advertise the sale through publication in a newspaper of general circulation in the area where the material is located, on the same day once a week for two consecutive weeks;

(2) May extend the period of a time for advertising; and

(3) Shall post a notice of sale in a conspicuous place in the office where bids are to be submitted.

(b) In the advertisement of sale, the authorized officer shall state:

(1) The location by legal description of the tract or tracts on which the material is being offered;

(2) The kind of materials being offered;

(3) The estimated quantities of materials being offered;

(4) The unit of measurement;

(5) The appraised prices;

(6) The time and place for receiving and opening of bids;

(7) The minimum deposit required;

(8) The access requirement;

(9) The method of bidding;

(10) The requirement that mining and reclamation plans shall be filed and that reclamation will be required if applicable;

(11) The bonding requirement;

(12) The location for inspection of contract terms and proposed stipulations;

(13) The office where additional information may be obtained; and

(14) Any additional information deemed necessary.

§ 3610.3-3 Conduct of sales.

(a) Bidding at competitive sales shall be by the submission of written sealed bids, oral bids or a combination of both, as directed by the authorized officer. In the event of a tie in high sealed bids, the highest bid shall be determined by oral auction among the persons making high bids. If no oral bid is made which is higher than the sealed bids, the successful bidder shall then be determined by lot. In oral auctions, immediately after the high bid is announced, the person offering the high bid shall confirm that bid in writing.

(b) When it is in the interest of the Government to do so, the authorized officer may reject any or all bids and may waive minor deficiencies in the bids.

§ 3610.3-4 Bid deposits.

A person making a bid to purchase mineral materials shall submit a deposit in advance of the sale.

(a) Sealed bids shall be accompanied by a deposit. At oral auctions, persons making bids shall make the deposit prior to opening of the bidding. The amount of the deposit shall be \$500 or 10 percent of the appraised value as specified in the sale advertisement, whichever is greater.

(b) Deposits may be in the form of cash, money orders, bank drafts, or cashier's or certified checks made pay-

able to the Bureau of Land Management.

(c) The bid deposits of all persons making bids, except that of the successful bidder, shall be returned upon conclusion of the bidding.

(d) The deposit of the person making the successful bid shall be applied to the purchase price at the time the contract is signed by the authorized officer.

§ 3610.3-5 Contracts.

(a) The authorized officer may require the person making the high bid to furnish information that is necessary to determine his ability to fulfill the obligations of the contract. The contract shall be awarded by the authorized officer to the person making the highest bid, unless he is unwilling to accept the terms of the contract or unless all bids are rejected.

(b) Within 30 days after receipt of the contract, the person making the successful bid shall sign and return the contract, together with any required performance bond and mining and reclamation plan when applicable. The authorized officer may extend this period an additional 30 days upon written request of the applicant, within the first 30-day period. If the person making the successful bid fails to comply within the first 30-day period, or an approved 30-day extension, the successful bidder shall forfeit the bid deposit as liquidated damages. The authorized officer may offer and award the contract for the amount of the high bid to the person making the next highest bid who is qualified and willing to accept the contract, upon the redeposit of the amount required under § 3610.3-4(a).

(c) The authorized officer shall make all sales on contract forms approved by the Director. The authorized officer may include in the contract such additional provisions as are deemed necessary to protect other resource values or prevent unnecessary and undue degradation of the public lands.

§ 3610.3-6 Term of contract.

The term for competitive contracts of sale for mineral materials shall not exceed 10 years, excluding extension or removal periods.

PART 3620—FREE USE

Subpart 3621—Free Use: General

Sec.

- 3621.1 Permits: General.
- 3621.1-1 Applications.
- 3621.1-2 Terms.
- 3621.1-3 Assignment.
- 3621.1-4 Conditions.
- 3621.1-5 Removal of materials by agent.
- 3621.1-6 Bond.
- 3621.1-7 Cancellation.
- 3621.2 Permits to governmental units and non-profit organizations.

Subpart 3622—Free Use of Petrified Wood

- 3622.1 Program: General.
- 3622.2 Procedures: permits.
- 3622.3 Designation of areas.
- 3622.4 Collection rules.

AUTHORITY: Minerals Management Act of July 31, 1947, as amended (30 U.S.C. 601, 602).

SOURCE: 48 FR 27015, June 10, 1983, unless otherwise noted.

Subpart 3621—Free Use: General

- § 3621.1 Permits: general.

§ 3621.1-1 Applications.

An application for a free use permit shall be filed with the authorized officer on forms approved by the Director.

§ 3621.1-2 Terms.

The authorized officer may grant free use permits to any Federal, or State agency, unit or subdivision, including municipalities, for periods deemed appropriate, not to exceed 10 years. The authorized officer may issue free use permits not to exceed 1 year in duration to non-profit organizations, and may extend any free use permit for a single additional period not to exceed 1 year.

§ 3621.1-3 Assignment.

A free use permit may be assigned or transferred to persons or other entities listed in § 3621.1-2 of this title qualified to hold a free use permit with the written approval of the authorized officer.

§ 3621.1-4 Conditions.

(a) The authorized officer shall incorporate the provisions governing the selection, removal and use of the mineral materials in the free use permit.

(b) The authorized officer shall not issue a free use permit upon determination that the applicant owns or controls an adequate supply of suitable mineral materials that are readily available and can be mined in a manner which is economically and environmentally acceptable.

(c) Mineral materials obtained under a free use permit shall not be bartered or sold.

(d) The permittee shall not remove the mineral materials before a permit is issued or after a permit has expired.

§ 3621.1-5 Removal of materials by agent.

A free use permittee may allow an agent to extract the mineral materials. This agent shall not charge the permittee for the materials extracted, processed or removed, or receive mineral materials from the permit area as payment for services rendered, or as a donation or gift.

§ 3621.1-6 Bond.

The authorized officer may require a bond as a guarantee of faithful performance of the provisions of the permit and applicable regulations.

§ 3621.1-7 Cancellation.

The authorized officer may cancel a permit if the permittee fails, after adequate notice, to observe the terms and conditions of the permit.

§ 3621.2 Permits to governmental units and non-profit organizations.

(a) The authorized officer may issue a free use permit to any Federal or State agency, unit or subdivision, including municipalities, without limitation as to the number of permits or as to the value of the mineral materials to be extracted or removed, provided the applicant makes a satisfactory showing to the authorized officer that these materials will be used for a public project.

(b) The authorized officer may issue a free use permit to a non-profit organization or corporation for not more than 5,000 cubic yards (or weight equivalent) in any period of twelve consecutive months.

(c) Permits issued under this subpart shall constitute a superior right to remove the materials and shall continue

in full force and effect, in accordance with its terms and provisions, as against any subsequent claim to or entry of the lands.

Subpart 3622—Free Use of Petrified Wood

§ 3622.1 Program: General.

(a) Persons may collect limited quantities of petrified wood for noncommercial purposes under terms and conditions consistent with the preservation of significant deposits as a public recreational resource.

(b) The purchase of petrified wood for commercial purposes is provided for in § 3610.1 of this title.

§ 3622.2 Procedures: permits.

No application or permit for free use is required except for specimens over 250 pounds in weight. The authorized officer may issue permits, using the procedures of subpart 3621 of this title, for the removal of such specimens if the applicant certifies that they will be displayed to the public in a museum or similar institution.

§ 3622.3 Designation of areas.

(a) All public lands administered by the Bureau of Land Management and the Bureau of Reclamation are open to or available for free use removal of petrified wood unless otherwise provided for by notice in the FEDERAL REGISTER. Free use areas under the jurisdiction of said Bureaus may be modified or cancelled by notices published in the FEDERAL REGISTER.

(b) The heads of other Bureaus in the Department of the Interior may publish in the FEDERAL REGISTER designations, modifications or cancellations of free use areas for petrified wood on lands under their jurisdiction.

(c) The Secretary of the Interior may designate, modify or cancel free use areas for petrified wood on public lands which are under the jurisdiction of other Federal departments or agencies, other than the Department of Agriculture, with the consent of the head of other Federal departments or agencies concerned, upon publication of notice in the FEDERAL REGISTER.

§ 3622.4 Collection rules.

(a) General. The authorized officer shall control the removal without charge of petrified wood from public lands using the following criteria:

(1) The maximum quantity of petrified wood that any one person is allowed to remove without charge per day is 25 pounds in weight plus one piece, provided that the maximum total amount that one person may remove in one calendar year shall not exceed 250 pounds. Pooling of quotas to obtain pieces larger than 250 pounds is not allowed.

(2) Except for holders of permits issued under subpart 3621 of this title to remove museum pieces, no person shall use explosives, power equipment, including, but not limited to, tractors, bulldozers, plows, power-shovels, semitrailers or other heavy equipment for the excavation or removal of petrified wood.

(3) Petrified wood obtained under this section shall be for personal use and shall not be sold or bartered to commercial dealers.

(4) The collection of petrified wood shall be accomplished in a manner that prevents unnecessary and undue degradation of lands.

(b) Additional rules. The head of the agency having jurisdiction over a free use area may establish and publish additional rules for collecting petrified wood for noncommercial purposes to supplement those included in § 3622.4(a) of this title.

9239.1-3 Measure of damages.
 9239.2 Unlawful enclosures or occupancy.
 9239.2-1 Enclosures of public lands in specified cases declared unlawful.
 9239.2-2 Duty of district attorney.
 9239.2-3 Responsibility for execution of law.
 9239.2-4 Filing of charges or complaints.
 9239.2-5 Settlement and free passage over public lands not to be obstructed.
 9239.3 Grazing, Alaska.
 9239.5 Minerals.
 9239.5-1 Ore.
 9239.5-2 Oil.
 9239.5-3 Coal.
 9239.6 Materials.
 9239.6-1 Turpentine.
 9239.7 Right-of-way.
 9239.7-1 Public lands.

AUTHORITY: R.S. 2478; 43 U.S.C. 1201; 43 U.S.C. 1701, *et seq.*; 18 U.S.C. 1851-1859.
 SOURCE: 35 FR 9800, June 13, 1970, unless otherwise noted.

Subpart 9239—Kinds of Trespass

§ 9239.0-3 Authority.

(a) Sections 9239.0-3 to 9239.7 are issued under the authority of R.S. 2478; 43 U.S.C. 1201.

(b) In addition to liability for trespass on the public lands, as indicated in this part, persons responsible for such trespass may be prosecuted criminally under any applicable Federal law. Penalties are prescribed by the following statutes:

- (1) Timber trespass. 18 U.S.C. 1852, 1853.
- (2) Turpentine trespass. 18 U.S.C. 1854.
- (3) Coal trespass. 18 U.S.C. 1851; 30 U.S.C. 201(b)(4).

[35 FR 9800, June 13, 1970, as amended at 42 FR 4460, Jan. 25, 1977]

§ 9239.0-7 Penalty for unauthorized removal of material.

The extraction, severance, injury, or removal of timber or other vegetative resources or mineral materials from public lands under the jurisdiction of the Department of the Interior, except when authorized by law and the regulations of the Department, is an act of trespass. Trespassers will be liable in damages to the United States, and will be subject to prosecution for such unlawful acts.

[35 FR 9800, June 13, 1970, as amended at 56 FR 10176, Mar. 11, 1991]

§ 9239.0-8 Measure of damage.

The rule of damages to be applied in cases of timber or other vegetative resources, coal, oil, and other trespass in accordance with the decision of the Supreme Court of the United States in the case of *Mason et al. v. United States* (260 U.S. 545, 67 L. ed. 398), will be the measure of damages prescribed by the laws of the State in which the trespass is committed, unless by Federal law a different rule is prescribed or authorized.

[35 FR 9800, June 13, 1970, as amended at 56 FR 10176, Mar. 11, 1991]

§ 9239.0-9 Sale, lease, permit, or license to trespassers.

(a) For the purpose of this section, a trespasser is any person, partnership, association, or corporation responsible for the unlawful use of, or injury to, property of the United States.

(b) The authorized officer may refuse to sell to a trespasser timber or materials, or to issue to him a lease, permit, or license if, after a demand for payment has been served by certified or registered mail on the trespasser, a satisfactory arrangement for payment of the debt due the United States has not been made within reasonable time, and there is reason for the authorized officer to believe payment will not be made. Satisfactory arrangement shall be deemed to have been made by:

- (1) Payment by the trespasser of the amount found to be due by the authorized officer, by a final judgment of a court, or pursuant to a compromise settlement accepted by the United States; or
- (2) Execution by the trespasser of a promissory note or installment agreement, satisfactory to the authorized officer, so long as the agreed-upon payments are made on schedule; or
- (3) Delivery by the trespasser of a bond guaranteeing payment to the United States of the amount found to be due by the authorized officer or by a court of competent jurisdiction; or
- (4) Cancellation of the debt due the United States by a discharge in bankruptcy.

(c) Notwithstanding the provisions of paragraph (b) of this section, the authorized officer may sell to a trespasser

timber or materials or issue to him a lease, permit, or license for materials despite lack of a satisfactory arrangement for payment if such officer establishes in writing that:

(1) There is no other qualified bidder or no other qualified bidder will meet the high bid, and

(2) The sale, lease, permit, or license to the trespasser is necessary to protect substantial interests of the United States either by preventing deterioration of, or damage to, resources of the United States or by accepting an advantageous offer, and

(3) The timber management or other resource management program of the United States will not be adversely affected by the action.

§ 9239.1 Timber and other vegetative resources.

§ 9239.1-1 Unauthorized cutting, removal, or injury.

(a) All of the definitions in § 5400.0-5 of this title apply to this section.

(b) Commission of any of the acts listed in §§ 5462.2 and 5511.4 of this title constitutes a trespass.

[56 FR 10176, Mar. 11, 1991, as amended at 60 FR 50451, Sept. 29, 1995]

§ 9239.1-2 Penalty for trespass.

(a) In accordance with §§ 9239.0-7, 9239.0-8, and 9239.1-1 of this subpart, anyone responsible for a trespass act is liable to the United States in a civil action for damages and may be prosecuted under criminal law as provided in § 9265.6 of this chapter.

(b) The cutting of timber from the public land in Alaska, other than in accordance with the terms of the law and §§ 5511.2 to 5511.2-6 of this chapter will render the persons responsible liable to the United States in a civil action for trespass and such persons may be prosecuted criminally under title 18 U.S.C., or under State law.

[35 FR 9800, June 13, 1970, as amended at 56 FR 10176, Mar. 11, 1991; 60 FR 50451, Sept. 29, 1995]

§ 9239.1-3 Measure of damages.

(a) Unless State law provides stricter penalties, in which case the State law shall prevail, the following minimum

PART 9230—TRESPASS

Subpart 9239—Kinds of Trespass

Sec.
 9239.0-3 Authority.
 9239.0-7 Penalty for unauthorized removal of material.
 9239.0-8 Measure of damage.
 9239.0-9 Sale, lease, permit, or license to trespassers.
 9239.1 Timber and other vegetative resources.
 9239.1-1 Unauthorized cutting, removal, or injury.
 9239.1-2 Penalty for trespass.

damages apply to trespass of timber and other vegetative resources:

(1) Administrative costs incurred by the United States as a consequence of the trespass.

(2) Costs associated with the rehabilitation and stabilization of any resources damaged as a result of the trespass.

(3) Twice the fair market value of the resource at the time of the trespass when the violation was nonwillful, and 3 times the fair market value at the time of the trespass when the violation was willful.

(4) In the case of a purchase from a trespasser, if the purchaser has no knowledge of the trespass, but should have had such knowledge through reasonable diligence, the value at the time of the purchase.

(b) The provisions of paragraph (a) of this section shall not be deemed to limit this measure of damages that may be determined under State law.

(56 FR 10176, Mar. 11, 1991, as amended at 60 FR 50451, Sept. 29, 1995)

§ 9239.2 Unlawful enclosures or occupancy.

§ 9239.2-1 Enclosures of public lands in specified cases declared unlawful.

(a) Section 1 of the Act of February 25, 1885 (23 Stat. 321; 43 U.S.C. 1061), declares any enclosure of public lands made or maintained by any party, association, or corporation who "had no claim or color of title made or acquired in good faith, or an asserted right thereto, by or under claim, made in good faith with a view to entry thereof at the proper land office under the general laws of the United States at the time any such enclosure was or shall be made" to be unlawful and prohibits the maintenance of erection thereof.

(b) Section 4 of the Taylor Grazing Act of June 28, 1934 (48 Stat. 1271; 43 U.S.C. 3150) provides:

Fences . . . and other improvements necessary to the care and management of the permitted livestock may be constructed on the public lands within such grazing districts under permit issued by the authority of the Secretary, or under such cooperative arrangement as the Secretary may approve.

(c) Section 10, paragraph (4) of the Federal Range Code, § 4112.3 of this chapter, containing rules for the administration of grazing districts prohibits "Constructing or maintaining any kind of improvements, structures, fences, or enclosures on the Federal range, including stock driveways, without authority of law or a permit."

(d) Section 2 of the Taylor Grazing Act of June 28, 1934 (48 Stat. 1270; 43 U.S.C. 315a), provides that "any willful violation of the provisions of this act" or of "rules and regulations thereunder after actual notice thereof shall be punishable by a fine of not more than \$500."

(e) Violations of any of the provisions of the Act of February 25, 1885, constitute a misdemeanor (Sec. 4, 23 Stat. 322; 35 Stat. 40; 43 U.S.C. 1064).

§ 9239.2-2 Duty of district attorney.

Section 2 of the Act of February 25, 1885 (23 Stat. 321; 43 U.S.C. 1062, 28 U.S.C. 41, Par. 21), provides that it shall be the duty of the district attorney of the United States for the proper district on affidavit filed with him by any citizen of the United States that such unlawful enclosure is being made or maintained, showing the description of the lands enclosed with reasonable certainty so that the enclosure may be identified, to institute a civil suit in the proper United States district or circuit court or territorial district court in the name of the United States and against the parties named or described who shall be in charge of or controlling the enclosure complained of.

§ 9239.2-3 Responsibility for execution of law.

The execution of this law devolves primarily upon the officers of the Department of Justice, but as it is the purpose to free the public lands from unlawful enclosures and obstructions, it is deemed incumbent upon the officers of the Department of the Interior to furnish the officers of the Department of Justice with the evidence necessary to a successful prosecution of the law.

§ 9239.2-4 Filing of charges or complaints.

All charges or complaints against unlawful enclosures or obstructions upon the public lands should be filed with the proper State Director. Such charges or complaints, when possible, should give the name and address of the party or parties making or maintaining such enclosure or obstruction and should describe the land enclosed in such a way that it may be readily identified. The section, township, and range numbers should be given, if possible.

§ 9239.2-5 Settlement and free passage over public lands not to be obstructed.

Section 3 of the Act of February 25, 1885 (23 Stat. 322; 43 U.S.C. 1063), provides that no person by force, threats, intimidation, or by any fencing or enclosing or any other unlawful means shall prevent or obstruct or shall combine or confederate with others to prevent or obstruct any person from peaceably entering upon or establishing a settlement or residence upon any tract of public land subject to settlement or entry under the public land laws of the United States or shall prevent or obstruct free passage or transit over or through the public lands.

§ 9239.3 Grazing, Alaska.

(a) *Reindeer.* (1) Any use of the Federal lands for reindeer grazing purposes, unless authorized by a valid permit issued in accordance with the regulations in subpart 4132 of this chapter, is unlawful and is prohibited.

(2) Any person who willfully violates any of the rules and regulations in subpart 4132 of this chapter shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by imprisonment for not more than one year, or by a fine of not more than \$500.

(b) *Livestock.* (1) Grazing livestock upon, allowing livestock to drift and graze on, or driving livestock across lands that are subject to lease or permit under the provisions of this part or within a stock driveway, without a lease or other authorization from the Bureau of Land Management, is prohibited and constitutes trespass. Trespass-

ers will be liable in damages to the United States for the forage consumed and for injury to Federal property, and may be subject to civil and criminal prosecution for such unlawful acts. A lessee who grazes livestock in violation of the terms and conditions of his lease by exceeding numbers specified, or by allowing the livestock to be on Federal land in an area or at a time different from that designated in his lease shall be in default and shall be subject to the provisions of § 4131.2-7 (g) and (h) of this chapter. Under section 2 of the Act, any person who willfully grazes livestock on public lands without authority, shall, upon conviction, be punished by a fine of not more than \$500.

(2) Whenever it appears that a violation exists the authorized officer shall serve written notice upon the alleged violator. The notice shall set forth the act or omission constituting such violation and will allow the party involved a reasonable specified time from receipt of notice to demonstrate that there has been no violation or that he has since achieved compliance. If the showing is satisfactory to the authorized officer he will close the case. If satisfactory showing is not made within the time allowed, the violation alleged in the notice will be deemed to have been willful.

(3) Where the owner of the trespassing livestock, or his representative, is known, the authorized officer shall determine the amount of the damage to the public land and other property of the United States and shall make a demand for payment upon the alleged violator setting forth the foregoing values including the value of the forage consumed. Such forage value shall be computed at the commercial rates, if susceptible to proof by reasonably available and reliable data; otherwise, a minimum charge of \$3 per animal unit month for trespass not clearly willful will be made. Where the trespasses are repeated and/or willful, a minimum charge of \$4 per animal unit month for forage consumed will be charged. All offers for settlement for value of forage consumed and for damage to the public land or to other property of the United States resulting from an alleged violation of any provision of the act or regulations found

within §4131.0-3 *et seq.* of this chapter in the amount of \$2,000 or less may be accepted by the authorized officer. Offers for settlement in excess of \$2,000 will be transmitted to the State Director for appropriate action. An offer of settlement will not constitute satisfaction of civil liability for consumed forage and damage involved until finally accepted by the authorized officer or the State Director, and in no event will it relieve the violator of criminal liability. No lease or permit will be issued or renewed until payment of any amount found to be due the United States under this section has been offered.

[35 FR 9800, June 13, 1970. Redesignated at 43 FR 28076, July 5, 1978]

§9239.5 Minerals.

§9239.5-1 Ores.

(a) For ores trespass in a State where there is no State law governing such trespass, the measure of damages will be as follows:

(1) Measure of damages is the same as in the case of coal. Benson Mining and Smelting Co. v. Alta Mining and Smelting Co. (145 U.S. 428, 38 L. ed. 762; Durant Mining Co. v. Percy Consolidated Mining Co. (93 Fed. 166)).

§9239.5-2 Oil.

For oil trespass in a State where there is no State law governing such trespass, the measure of damages will be as follows:

(a) *Innocent trespass.* Value of oil taken, less amount of expense incurred in taking the same.

(b) *Willful trespass.* Value of the oil taken without credit or deduction for the expense incurred by the wrongdoers in getting it. *Mason v. United States* (273 Fed. 135).

§9239.5-3 Coal.

(a) *Determination of payment in coal trespass.* For coal trespass in a State where there is no State law governing such trespass, the measure of damages will be as follows:

(1) For innocent trespass, payment must be made for the value of the coal in place before severance. *United States v. Homestake Mining Company* (117 Fed. 481).

(2) For willful trespass, payment must be made for the full value of the coal at the time of conversion without deduction for labor bestowed or expense incurred in removing and marketing the coal. *Liberty Bell Gold Mining Company v. Smuggler-Union Mining Company* (203 Fed. 795). The mining of coal in trespass is presumed to be willful, in the absence of persuasive evidence of the innocence and good faith of the trespasser. *United States v. Ute Coal and Coke Company* (158 Fed. 20).

(b) *Coal mined when there is no lease in effect.* Any mining of coal which is not pursuant to a coal lease in effect at the time of the mining shall constitute a trespass, and the coal so mined must be paid for on a trespass basis.

(c) *Coal mined by successful bidder at public sale.* The successful bidder at public sale for a coal leasing unit does not acquire any right to mine coal until he has complied with all the formalities required by the regulations, including the furnishing of a bond, and a lease has been issued to him. Coal mined by such applicant prior to the date of the issuance of a lease is in trespass and must be paid for on a trespass basis.

(d) *Coal permit, lease, or license not to issue until trespass account settled.* No coal permit, lease, or license will be issued to anyone known to have mined coal in trespass until the trespass account is settled.

(e) *Right of surface owner to mine coal for domestic use.* The owner of land patented with a reservation of the coal deposits, either under the act of March 3, 1909 (35 Stat. 844; 30 U.S.C. 81), or under the Act of June 22, 1910 (36 Stat. 583; 30 U.S.C. 83-85), has the right to mine coal for use upon the land for domestic purposes at any time prior to the disposal by the United States of the coal deposits.

(f) *Penalties for unauthorized exploration for coal.* (1) Any person who willfully conducts coal exploration for commercial purposes without an exploration license issued under subpart 3507 of this chapter shall be subject to a fine of not more than \$1,000 for each day of violation.

(2) All data collected by said person on any Federal lands as a result of such

violations shall immediately be made available to the Secretary, who shall make the data available to the public as soon as possible.

(3) No penalty under this section may be assessed unless such person is given notice and opportunity for a hearing with respect to such violation pursuant to part 4 of this chapter.

[35 FR 9800, June 13, 1970, as amended at 41 FR 36023, Aug. 28, 1976; 42 FR 4460, Jan. 25, 1977]

§9239.6 Materials.

§9239.6-1 Turpentine.

For turpentine trespass in a State where there is no State law governing such trespass, the measure of damages will be as follows:

(a) *Innocent trespass.* Value of the gum and injury done to the trees. *United States v. Taylor* (35 Fed. 484).

(b) *Willful trespass.* Value of the product manufactured from the crude turpentine by the settler, or any person into whose possession same may have passed, without credit for labor bestowed on the turpentine by the wrongdoer. *Union Naval Stores Co. v. United States* (240 U.S. 284, 60 L. ed. 644).

§9239.7 Right-of-way.

§9239.7-1 Public lands.

The filing of an application under part 2800, 2810, or 2880, of this chapter does not authorize the applicant to use or occupy the public lands for right-of-way purposes, except as provided at §§2800.0-5(m), 2802.1(d) and 2882.1, until written authorization has been issued by the authorized officer. Any unauthorized occupancy or use of public lands or improvements for right-of-way purposes constitutes a trespass against the United States for which the trespasser is liable for costs, damages, and penalties as provided in §§2801.3, 2812.1-3, and 2881.3, of this title. No new permit, license, authorization or grant of any kind shall be issued to a trespasser until:

(a) The trespass claim is fully satisfied; or

(b) The trespasser files a bond conditioned upon payment of the amount of damages determined to be due the United States; or

(c) The authorized officer determines in writing that there is a legitimate dispute as to the fact of the trespasser's liability or as to the extent of his liability and the trespasser files a bond in an amount determined by the authorized officer to be sufficient to cover payment of a future court judgment in favor of the United States.

[54 FR 25855, June 20, 1989]

velopment is a more beneficial use of the land than the mineral development.

§ 2720.0-3 Authority.

(a) Section 209(b) of the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1719(b), authorizes the Secretary of the Interior to convey mineral interests owned by the United States where the surface is or will be in non-Federal ownership, if certain specific conditions are met.

(b) Section 310 of the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1740, authorizes the Secretary of the Interior to promulgate rules and regulations to carry out the purposes of the Act.

§ 2720.0-5 Definitions.

As used in this subpart, the term:

(a) *Prospective record owner* means a person who has a contract or other agreement to purchase a tract of land that is in non-Federal ownership with a reservation of minerals in the United States, or a person who is purchasing a tract of land under the provisions of the Federal Land Policy and Management Act of 1976 or other laws authorizing the conveyance of Federal lands subject to the reservation of a mineral interest.

(b) *Known mineral values* means mineral rights in lands containing geologic formations that are valuable in the monetary sense for exploring, developing, or producing natural mineral deposits. The presence of such mineral deposits with potential for mineral development may be known because of previous exploration, or may be inferred based on geologic information.

(c) *Authorized officer* means any employee of the Bureau of Land Management to whom has been delegated the authority to perform the duties described in this part.

(d) *Proof of ownership* means evidence of title acceptable in local realty practice by attorneys and title examiners and may include a current title attorney's opinion, based on a current abstract of title prepared by a bonded

title insurance or title abstract company doing business in the locale where the lands are located.

[44 FR 1342, Jan. 4, 1979, as amended at 51 FR 9657, Mar. 20, 1986; 60 FR 12711, Mar. 8, 1995]

§ 2720.0-6 Policy.

As required by the Federal Land Policy and Management Act, the Bureau of Land Management may convey a federally owned mineral interest only when the authorized officer determines that it has no known mineral value, or that the mineral reservation is interfering with or precluding appropriate nonmineral development of the lands and that nonmineral development is a more beneficial use than mineral development. Allegation, hypothesis or speculation that such conditions could or may exist at some future time shall not be sufficient basis for conveyance. Failure to establish by convincing factual evidence that the requisite conditions of interference or preclusion presently exist, and that nonmineral development is a more beneficial use, shall result in the rejection of an application.

[51 FR 9657, Mar. 20, 1986, as amended at 60 FR 12711, Mar. 8, 1995]

§ 2720.0-9 Information collection.

(a) The Office of Management and Budget has approved under 44 U.S.C. 3507 the information collection requirements contained in part 2720 and assigned clearance number 1004-0153. The Bureau of Land Management is collecting the information to permit the authorized officer to determine whether the Bureau of Land Management should dispose of Federally-owned mineral interests. The Bureau of Land Management will use the information collected to make these determinations. A response is required to obtain a benefit.

(b) The Bureau of Land Management estimates the public reporting burden for this information to average 8 hours per response, including the time for reviewing regulations, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of

this collection of information, including suggestions for reducing the burden, to the Information Collection Clearance Officer (783), Bureau of Land Management, Washington, D.C. 20240, and the Office of Management and Budget, Paperwork Reduction Project, 1004-0153, Washington, D.C. 20503.

[60 FR 12711, Mar. 8, 1995]

§ 2720.1 Application to purchase federally-owned mineral interests.

§ 2720.1-1 Filing of application.

(a) Any existing or prospective record owner of the surface of land in which mineral interests are reserved or otherwise owned by the United States may file an application to purchase such mineral interests if—

(1) He has reason to believe that there are no known mineral values in the land, or

(2) The reservation of ownership of the mineral interests in the United States interferes with or precludes appropriate non-mineral development of the land and such development would be a more beneficial use of the land than its mineral development.

(b) Publication in the FEDERAL REGISTER of a notice of the filing of an application under this part shall segregate the mineral interests owned by the United States in the public lands covered by the application to the extent that they will not be subject to appropriation under the public land laws, including the mining laws. The segregative effect of the application shall terminate either upon issuance of a patent or other document of conveyance to such mineral interests, upon final rejection of the application or 2 years from the date of filing of the application which ever occurs first.

[44 FR 1342, Jan. 4, 1979, as amended at 51 FR 9657, Mar. 20, 1986]

§ 2720.1-2 Form of application.

(a) An application shall be filed with the proper BLM Office as listed in § 1821.2-1(d) of this title.

(b) No specific form is required.

(c) A non-refundable fee of \$50 shall accompany the application.

(d) Each application shall include:

(1) The name, legal mailing address, and telephone number of the existing or prospective record owner of the land included in the application;

(2) Proof of ownership of the land included in the application, and in the case of a prospective record owner, a copy of the contract of conveyance or a statement describing the method by which he will become the owner of record;

(3) In the case of non-Federal ownership of the surface, a certified copy of any patent or other instrument conveying the land included in the application and a showing of ownership in the applicant, with supporting survey evidence acceptable to the authorized officer, which may consist of a metes and bounds survey prepared and certified by a civil engineer or land surveyor licensed under the laws of the State in which the lands are located; and

(4) As complete a statement as possible concerning (i) the nature of federally-reserved or owned mineral values in the land, including explanatory information, (ii) the existing and proposed uses of the land, (iii) why the reservation of the mineral interests in the United States is interfering with or precluding appropriate non-mineral development of the land covered by the application (iv) how and why such development would be a more beneficial use of the land than its mineral development, and (v) a showing that the proposed use complies or will comply with State and local zoning and/or planning requirements.

[44 FR 1342, Jan. 4, 1979, as amended at 51 FR 9658, Mar. 20, 1986]

§ 2720.1-3 Action on application.

(a) Within 90 days of receipt of an application to purchase federally-owned mineral interests, the authorized officer shall, if the application meets the requirements for further processing, determine the amount of deposit required and so inform the applicant.

(b) No application filed under this subpart shall be processed until the applicant has either—

(1) Deposited with the authorized officer an amount of money that the authorized officer estimates is needed to cover administrative costs of processing,

including, but not limited to, costs of conducting an exploratory program, if one is required, to determine the character of the mineral deposits in the land, evaluating the existing data [for the data obtained under an approved exploratory program] to aid in determining the fair market value of the mineral interests to be conveyed, and preparing and issuing the documents of conveyance, or

(2) Has obtained the consent of the authorized officer to conduct an exploratory program, such program to be conducted only under a plan of operations approved by the authorized officer and deposited with the authorized officer an amount of money the authorized officer estimates is needed to cover administrative costs of processing, including, but not limited to, costs of evaluating existing data and data submitted from an approved exploratory program to determine the fair market value of the mineral interests to be conveyed and preparing and issuing the documents of conveyance.

The authorized officer, in reaching a determination as to whether there are any known mineral values in the land and, if so, the estimated costs of an exploratory program, if one is needed, will rely upon reports on minerals prepared by or reviewed and approved by the Bureau of Land Management.

(c) The authorized officer shall inform the applicant of his determination as to the need for an exploratory program, and where appropriate, the estimated cost of such a program. The applicant may request that the exploratory program be arranged by the authorized officer or request the consent of the authorized officer to accomplish any required exploratory program by other means, at his own expense, under a plan of operations approved by the authorized officer and to provide the results to the authorized officer for his use and approval. The applicant shall, within 60 days of receipt of such notice, or any extension thereof, respond to the authorized officer's notice, stating whether he wishes to have the authorized officer arrange to have conducted the required exploratory program or requests the consent of the authorized officer to accomplish any required exploratory program by other means.

Failure to respond to said notice shall void the application.

(d) If the applicant requests that any required exploratory program be arranged by the authorized officer, he shall submit the sum of money required under paragraph (b) of this section and the authorized officer shall have the exploratory program accomplished so as to aid in determining the fair market value of the Federal mineral interests covered by the application.

(e) If the applicant requests the consent of the authorized officer to accomplish any required exploratory program by other means, at his own expense, he shall at the time of making his request for such consent, file a plan of operations to carry out any required exploratory program for approval by the authorized officer. Such plan of operations shall be sufficient to provide the resource and economic data needed to aid in determining the fair market value of the Federal mineral interests to be conveyed. Said resource and economic data shall include, where appropriate, but not be limited to, geologic maps, geologic cross-sections, tables and descriptive information encompassing lithologic, geochemical, and geophysical data, assays of samples, drill logs and outcrop sections, which aid in establishing the location, nature, quantity, and grade, and which aid in determining the fair market value of the Federal mineral interests in the land covered by the application. The plan of operations shall conform to the laws, regulations and ordinances of all governmental bodies having jurisdiction over the lands covered by the application. The authorized officer shall decide within 90 days of receipt of said request whether he shall or shall not give his consent. The authorized officer shall not give his consent if he determines that the plan of operations is not adequate to supply the resource and economic data needed to aid him in determining the fair market value of the Federal mineral interests to be conveyed. If the authorized officer, in his discretion, approves the applicant's plan of operations, the applicant may proceed to execute the plan of operations, subject to the supervision of the authorized officer. If the authorized

officer does not give his consent to the applicant's request, the applicant may, within 60 days of such refusal, avail himself of the provisions of paragraph (d) of this section. Failure to deposit the required sum within the 60 day period shall void the application. All resource and economic data obtained from the approved exploratory program shall be supplied the authorized officer. The authorized officer shall supply that data needed for determination of the economic value of mineral resources to the Bureau of Land Management. The authorized officer relying upon those determinations shall determine the fair market value of the Federal mineral interests in the land covered by the application. If the authorized officer determines that the resource and economic data supplied from an approved exploratory program is not adequate to aid in determining the fair market value of the Federal mineral interests to be conveyed, he shall so notify the applicant and state what additional data is needed.

(f) Notwithstanding the provisions of the preceding paragraphs of this section, an application may be rejected without the applicant meeting the requirements of paragraph (b) of this section if the authorized officer determines from an examination of the application or of data readily available to him relating to the land concerned that the application does not meet the requirements of the Act.

[44 FR 1342, Jan. 4, 1979, as amended at 51 FR 9658, Mar. 20, 1986; 60 FR 17111, Mar. 8, 1995]

§ 2720.2 Determination that an exploratory program is not required.

(a) In instances where available data indicate that there are no known mineral values in the land covered by the application, an exploratory program shall not be required.

(b) The authorized officer will not require an exploratory program to ascertain the presence of mineral values where the authorized officer determines that a reasonable person would not make exploration expenditures with expectations of deriving economic gain from the mineral production.

(c) The authorized officer will not require an exploratory program if the authorized officer determines that, for

the mineral interests covered by the application, sufficient information is available to determine their fair market value.

[44 FR 1342, Jan. 4, 1979, as amended at 60 FR 12711, Mar. 8, 1995]

§ 2720.3 Action upon determination of the fair market value of the mineral interests.

(a) Upon the authorized officer's determination that all of the requirements of the Act for conveyance of mineral interests have been met by the applicant and all actions necessary to determine the fair market value of the Federal mineral interests in land covered by the application have been completed, the authorized officer shall notify the applicant in writing of the fair market value of the Federal mineral interests, including the administrative costs involved in development of and issuance of conveyance documents, and give a full and complete statement of the costs incurred in reaching such determination including any sum due the United States or that may be expended from the deposit made by the applicant. If the administrative costs of determining the fair market value of the Federal mineral interests exceed the amount of the deposit required of the applicant under this subpart, he will be informed that he is required to pay the difference between the actual costs and the deposit. If the deposit exceeds the administrative costs of determining the fair market value of the Federal mineral interests, the applicant will be informed that he is entitled to a credit for or a refund of the excess. The notice must require the applicant to pay both the fair market value of the Federal mineral interests and the remaining administrative costs owed within 90 days after the date the authorized officer mails the notice. Failure to pay the required amount within the allotted time shall constitute a withdrawal of the application and the application will be dismissed and the case closed.

(b) The Bureau of Land Management will convey mineral rights on lands for which this part does not require an exploratory program upon payment by the applicant of fair market value for those mineral interests and all admin-

istrative costs of processing the application to acquire the mineral rights.

[44 FR 1342, Jan. 4, 1979, as amended at 60 FR 12711, Mar. 8, 1995]

§ 2720.4 Issuance of document of conveyance.

Upon receipt of the payment required by § 2720.3 of this subpart, if any is required, the authorized officer shall issue the necessary document conveying to the applicant the mineral interests of the United States in the land covered by the application.

§ 2720.5 Appeals.

An applicant adversely affected by a decision of the authorized officer made pursuant to the provisions of this subpart shall have a right of appeal pursuant to part 4 of this title. Decisions of the authorized officer under this subpart shall be subject to reversal only if found to be arbitrary, capricious, and abuse of discretion or otherwise not in accordance with law.

**PART 2130—ACQUISITION OF
LANDS OR INTERESTS IN LANDS
BY PURCHASE OR CONDEMNATION**

Subpart 2130—Acquisition of Lands or Interests in Lands by Purchase or Condemnation: General

Sec.

2130.0-3 Authority.

2130.1—2130.3 [Reserved]

2130.4 Acquisition of lands in King Range Conservation Area.

2130.4-1 Purchase.

Subpart 2137—Condemnation of Lands or Interests in Lands

2137.0-7 Appraisals.

2137.0-8 [Reserved]

2137.0-9 Reasons for condemnation.

SOURCE: 41 FR 15851, Apr. 15, 1976, unless otherwise noted.

**Subpart 2130—Acquisition of
Lands or Interests in Lands by
Purchase or Condemnation:
General**

§ 2130.0-3 Authority.

The Act of October 21, 1970, (16 U.S.C. 460y) provides for the establishment of the King Range National Conservation Area and authorizes the Secretary of the Interior to acquire by purchase any land or interest in land within the area pursuant to the Act.

§§ 2130.1—2130.3 [Reserved]

§ 2130.4 Acquisition of lands in King Range Conservation Area.

§ 2130.4-1 Purchase.

If the Secretary of the Interior determines that the acquisition of land or interest in land is desirable for consolidation of public lands within the Area he may acquire land or interest in land within the King Range National Conservation Area by purchase with donated funds appropriated specifically for that purpose.

**Subpart 2137—Condemnation of
Lands or Interests in Lands**

§ 2137.0-7 Appraisals.

Prior to initiation of condemnation proceedings, the property will be appraised pursuant to approved Bureau procedures to determine its fair market value and an offer made to purchase it at that appraised price.

§ 2137.0-8 [Reserved]

§ 2137.0-9 Reasons for condemnation.

Incompatible use. The power of eminent domain will be exercised only if the Secretary finds that the use to which the land is being put is incompatible with the purposes of the King Range National Conservation Area Act or the management plan prepared in accordance with the Act, and if efforts to acquire the land by other means have failed.

Group 2200—Exchanges**PART 2200—EXCHANGES:
GENERAL PROCEDURES****Subpart 2200—Exchanges—General****Sec.**

2200.0-2 Objective.

2200.0-4 Responsibilities.

2200.0-5 Definitions.

2200.0-6 Policy.

2200.0-7 Scope.

2200.0-9 Information Collection.

**Subpart 2201—Exchanges—Specific
Requirements**

2201.1 Agreement to initiate an exchange.

2201.1-1 Assembled land exchanges.

2201.1-2 Segregation effect.

2201.1-3 Assumption of costs.

2201.2 Notice of exchange proposal.

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2201.3-1 Appraiser qualifications.

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2201.4 Bargaining; arbitration.

2201.5 Exchanges at approximately equal value.

2201.6 Value equalization: cash equalization waiver.

2201.7 Approval of exchanges.

2201.7-1 Notice of decision.

2201.7-2 Exchange agreement.

2201.8 Title standards.

2201.9 Case closing.

**Subpart 2202—Exchanges: National Forest
Exchange**

2202.1 Applicable regulations.

**Subpart 2203—Exchanges Involving Fee
Federal Coal Deposits**

2203.0-6 Policy.

2203.0-9 Cross references.

2203.1 Opportunity for public comment and public meeting on exchange proposal.

2203.2 Submission of information concerning proposed exchange.

2203.3 Public meeting.

2203.4 Consultation with the Attorney General.

2203.5 Action on advice of the Attorney General.

AUTHORITY: 43 U.S.C. 1716, 1740.

SOURCE: 46 FR 1638, Jan. 6, 1981, unless otherwise noted.

from a list recommended by the American Arbitration Association.

(f) *Assembled land exchange* means the consolidation of multiple parcels of Federal and/or non-Federal lands for purposes of one or more exchange transactions over a period of time.

(g) *Authorized officer* means any employee of the Bureau of Land Management who has been delegated the authority and responsibility to make decisions and perform the duties described in this part.

(h) *Bargaining* means a process, other than arbitration, by which parties attempt to resolve a dispute concerning the appraised value of the lands involved in an exchange.

(i) *Federal lands* means any lands or interests in lands, such as mineral or timber interests, that are owned by the United States and administered by the Secretary of the Interior through the Director of the Bureau of Land Management, without regard to how the United States acquired ownership, except: (1) Lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts and Eskimos.

(j) *Hazardous substances* means those substances designated under Environmental Protection Agency regulations at 40 CFR part 302.

(k) *Highest and best use* means the most probable legal use of a property, based on market evidence as of the date of valuation, expressed in an appraiser's supported opinion.

(l) *Lands* means any land and/or interests in land.

(m) *Ledger account* means an accounting mechanism that tracks the differential in dollar value of lands conveyed throughout a series of transactions. A ledger reports each transaction by date, value of Federal land, value of non-Federal land, the difference between these values upon completion of each transaction, and a cumulative balance and differential.

(n) *Market value* means the most probable price in cash, or terms equivalent to cash, that lands or interests in lands should bring in a competitive and open market under all conditions requisite to a fair sale, where the buyer and seller each acts prudently and

knowledgeably, and the price is not affected by undue influence.

(o) *Mineral laws* means the mining laws, mineral leasing laws, and the Geothermal Steam Act, but not the Materials Sales Act, administered by the Secretary of the Interior through the Bureau of Land Management.

(p) *Outstanding interests* means rights or interests in property held by an entity other than a party to an exchange.

(q) *Party* means the United States or any person, State or local government who enters into an agreement to initiate an exchange.

(r) *Person* means any individual, corporation, or other legal entity legally capable to hold title to and convey land. An individual must be a citizen of the United States and a corporation must be subject to the laws of the United States or of the State where the land is located or the corporation is incorporated.

(s) *Public land laws* means that body of general land laws administered by the Secretary of the Interior through the Bureau of Land Management, excepting, however, the mineral laws.

(t) *Reserved interest* means an interest in real property retained by a party from a conveyance of the title to that property.

(u) *Resource values* means any of the various commodity values (e.g., timber or minerals) or non-commodity values (e.g., wildlife habitat or scenic vistas), indigenous to particular land areas, surface and subsurface.

(v) *Secretary* means the Secretary of the Interior or the individual to whom the authority and responsibilities of that official, as to matters considered in this part, have been delegated.

(w) *Segregation* means the removal for a limited period, subject to valid existing rights, of a specified area of the Federal lands from appropriation under the public land laws and mineral laws, pursuant to the authority of the Secretary of the Interior to allow for the orderly administration of the Federal lands.

(x) *Statement of value* means a written report prepared by a qualified appraiser that states the appraiser's conclusion(s) of value.

§ 2200.0-6 Policy.

(a) *Discretionary nature of exchanges.* The Secretary is not required to exchange any Federal lands. Land exchanges are discretionary, voluntary real estate transactions between the Federal and non-Federal parties. Unless and until the parties enter into a binding exchange agreement, any party may withdraw from and terminate an exchange proposal or an agreement to initiate an exchange at any time during the exchange process, without any obligation to reimburse, or incur any liability to, any party, person or other entity.

(b) *Determination of public interest.* The authorized officer may complete an exchange only after a determination is made that the public interest will be well served. When considering the public interest, the authorized officer shall give full consideration to the opportunity to achieve better management of Federal lands, to meet the needs of State and local residents and their economies, and to secure important objectives, including but not limited to: Protection of fish and wildlife habitats, cultural resources, watersheds, wilderness and aesthetic values; enhancement of recreation opportunities and public access; consolidation of lands and/or interests in lands, such as mineral and timber interests, for more logical and efficient management and development; consolidation of split estates; expansion of communities; accommodation of land use authorizations; promotion of multiple-use values; and fulfillment of public needs. In making this determination, the authorized officer must find that:

(1) The resource values and the public objectives that the Federal lands or interests to be conveyed may serve if retained in Federal ownership are not more than the resource values of the non-Federal lands or interests and the public objectives they could serve if acquired, and

(2) The intended use of the conveyed Federal lands will not, in the determination of the authorized officer, significantly conflict with established management objectives on adjacent Federal lands and Indian trust lands. Such finding and the supporting ra-

tionale shall be made part of the administrative record.

(c) *Equal value exchanges.* Except as provided in § 2201.5 of this part, lands or interests to be exchanged shall be of equal value or equalized in accordance with the methods set forth in § 2201.6 of this part. An exchange of lands or interests shall be based on market value as determined by the Secretary through appraisal(s), through bargaining based on appraisal(s), or through arbitration.

(d) *Same-State exchanges.* The Federal and non-Federal lands involved in an exchange authorized pursuant to this Federal Land Policy and Management Act of 1976, as amended, shall be located within the same State.

(e) *O and C land exchanges.* Non-Federal lands acquired in exchange for re-vested Oregon and California Railroad Company Grant lands or reconveyed Coos Bay Wagon Road Grant lands are required to be located within any one of the 18 counties in which the original grants were made, and, upon acquisition by the United States, automatically shall assume the same status as the lands for which they were exchanged.

(f) *Congressional designations.* Upon acceptance of title by the United States, lands acquired by an exchange that are within the boundaries of any unit of the National Forest System, National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, or any other system established by Act of Congress; the California Desert Conservation Area; or any national conservation or national recreation area established by Act of Congress, immediately are reserved for and become part of the unit or area within which they are located, without further action by the Secretary, and thereafter shall be managed in accordance with all laws, rules, regulations, and land use plans applicable to such unit or area.

(g) *Land and resource management planning.* The authorized officer shall consider only those exchange proposals that are in conformance with land use

disposal of hazardous substances on the Federal lands to the other parties in accordance with the provisions of 40 CFR part 373. The authorized officer shall provide this notice in the exchange agreement. The authorized officer shall also provide such notices, to the extent information is readily available, in the agreement to initiate an exchange. Unless the non-Federal party is a potentially responsible party under 42 U.S.C. 9607(a), the conveyance document from the United States shall contain a covenant in accordance with 42 U.S.C. 9620(h)(3). Where the non-Federal party is a potentially responsible party with respect to the property, it may be appropriate to enter into an agreement, as referenced in 42 U.S.C. 9607(e), whereby that party would indemnify the United States and hold the United States harmless against any loss or cleanup costs after conveyance.

(2) *Non-Federal lands.* The non-Federal party shall notify the authorized officer of any known, suspected and/or reasonably ascertainable storage, release, or disposal of hazardous substances on the non-Federal land pursuant to § 2201.1 of this part. Notwithstanding such notice, the authorized officer shall determine whether hazardous substances are known to be present on the non-Federal land involved in an exchange. If hazardous substances are known or believed to be present on the non-Federal land, the authorized officer shall reach an agreement with the non-Federal party regarding the responsibility for appropriate response action concerning the hazardous substances before completing the exchange. The terms of this agreement and any appropriate "hold harmless" agreement shall be included in an exchange agreement, pursuant to § 2201.7-2 of this part.

(k) *Legal description of properties.* All lands subject to an exchange shall be properly described on the basis of either a survey executed in accordance with the Public Land Survey System laws and standards of the United States or, if those laws and standards cannot be applied, the lands shall be properly described and clearly locatable by other means as may be prescribed or allowed by law.

plans or plan amendments, where applicable. Lands acquired by an exchange within a Bureau of Land Management district shall automatically become public lands as defined in 43 U.S.C. 1702 and shall become part of that district. The acquired lands shall be managed in accordance with existing regulations and provisions of applicable land use plans and plan amendments. Lands acquired by an exchange that are located within the boundaries of areas of critical environmental concern or any other area having an administrative designation established through the land use planning process shall automatically become part of the unit or area within which they are located, without further action by the Bureau of Land Management, and shall be managed in accordance with all laws, rules, regulations, and land use plans applicable to such unit or area.

(h) *Environmental analysis.* After an agreement to initiate an exchange is signed, an environmental analysis shall be conducted by the authorized officer in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4371), the Council on Environmental Quality regulations (40 CFR parts 1500-1508), and the environmental policies and procedures of the Department of the Interior and the Bureau of Land Management. In making this analysis, the authorized officer shall consider timely written comments received in response to the published exchange notice, pursuant to § 2201.2 of this part.

(i) *Reservations or restrictions in the public interest.* In any exchange, the authorized officer shall reserve such rights or retain such interests as are needed to protect the public interest or shall otherwise restrict the use of Federal lands to be exchanged, as appropriate. The use or development of lands conveyed out of Federal ownership are subject to any restrictions imposed by the conveyance documents and all laws, regulations, and zoning authorities of State and local governing bodies.

(j) *Hazardous substances—(1) Federal lands.* The authorized officer shall determine whether hazardous substances may be present on the Federal lands involved in an exchange and shall provide notice of known storage, release, or

(l) *Unsurveyed school sections.* For purposes of exchange only, unsurveyed school sections, which would become State lands upon survey by the Secretary, are considered as "non-Federal" lands and may be used by the State in an exchange with the United States. However, minerals shall not be reserved by the State when unsurveyed sections are used in an exchange. As a condition of the exchange, the State shall have waived, in writing, all rights to unsurveyed sections used in the exchange.

(m) *Coordination with State and local governments.* At least 60 days prior to the conveyance of and upon issuance of the deed or patent for Federal lands, the authorized officer will notify the Governor of the State within which the Federal lands covered by the notice are located and the head of the governing body of any political subdivision having zoning or other land use regulatory authority in the geographical area within which the Federal lands are located.

(n) *Fee coal exchanges.* As part of the consideration of whether public interest would be served by the acquisition of fee coal through exchange, the provisions of subpart 3461 of this title shall be applied and shall be evaluated as a factor and basis for the exchange.

§ 2200.0-7 Scope.

(a) These rules set forth the procedures for conducting exchanges of Federal lands. The procedures in these rules are supplemented by the Bureau of Land Management Manuals and Handbooks 2200 and 9310. The contents of these supplemental materials are not considered to be a part of these rules.

(b) These rules apply to all exchanges involving Federal lands, as defined herein, except to the extent they are inconsistent with the authorities listed in parts 2210, 2240, 2250, and 2270 of this title. These rules also apply to the exchange of interests in either Federal or non-Federal lands, including, but not limited to, minerals, water rights, and timber.

(c) The application of these rules to exchanges made under the authority of the Alaska Native Claims Settlement Act, as amended (43 U.S.C. 1621) or the

Alaska National Interest Lands Conservation Act (16 U.S.C. 3192), shall be limited to those provisions that do not conflict with the provisions of these Acts.

(d) Pending exchanges initiated prior to December 17, 1993 shall proceed in accordance with this rule unless:

(1) In the judgment of the authorized officer, it would be more expeditious to continue following the procedures in effect prior to December 17, 1993; or

(2) A binding agreement to exchange was in effect prior to December 17, 1993; and

(3) To proceed as provided in paragraphs (d) (1) or (2) of this section would not be inconsistent with applicable law.

(e) Exchanges proposed by persons holding fee title to coal deposits that qualify for exchanges under the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1260(b)(6)) and as provided in subpart 3436 of this title shall be processed in accordance with this part, except as otherwise provided in subpart 3436 of this title.

§ 2200.0-8 Information collection.

(a) The collection of information contained in part 2200 of Group 2200 has been approved by the Office of Management and Budget under 44 U.S.C. 3501 et seq. and assigned clearance number 1004-0056. The information will be used to initiate and complete land exchanges with the Bureau of Land Management. Responses are required to obtain benefits in accordance with the Federal Land Policy and Management Act of 1976, as amended.

(b) Public reporting burden for this information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, should be sent to the Division of Information Resources Management (870), Bureau of Land Management, 1849 C Street, NW., Washington, DC 20240; and the Paperwork Reduction Project

(1004-0056), Office of Management and Budget, Washington, DC 20503.

Subpart 2201—Exchange—Specific Requirements

§ 2201.1 Agreement to initiate an exchange.

(a) Exchanges may be proposed by the Bureau of Land Management or by any person, State, or local government. Initial exchange proposals should be directed to the authorized officer responsible for the management of Federal lands involved in an exchange.

(b) To assess the feasibility of an exchange proposal, the prospective parties may agree to obtain a preliminary estimate of the values of the lands involved in the proposal. The preliminary estimate is generally not an appraisal but shall be prepared by a qualified appraiser.

(c) If the authorized officer agrees to proceed with an exchange proposal, a nonbinding agreement to initiate an exchange shall be executed by all prospective parties. At a minimum, the agreement shall include:

(1) The identity of the parties involved in the proposed exchange and the status of their ownership or ability to provide title to the land;

(2) A description of the lands or interest in lands being considered for exchange;

(3) A statement by each party, other than the United States and State and local governments, certifying that the party is a citizen of the United States or a corporation or other legal entity subject to the laws of the United States or a State thereof;

(4) A description of the appurtenant rights proposed to be exchanged or reserved; any authorized uses including grants, permits, easements, or leases; and any known unauthorized uses, outstanding interests, exceptions, adverse claims, covenants, restrictions, title defects or encumbrances;

(5) A time schedule for completing the proposed exchange;

(6) An assignment of responsibility for performance of required functions and for costs associated with processing the exchange;

(7) A statement specifying whether compensation for costs assumed will be

allowed pursuant to the provisions of § 2201.1-3 of this part;

(8) Notice of any known release, storage, or disposal of hazardous substances on involved Federal or non-Federal lands, and any commitments regarding responsibility for removal or other remedial actions concerning such substances on involved non-Federal lands. All such terms and conditions regarding non-Federal lands shall be included in a land exchange agreement pursuant to § 2201.7-2 of this part;

(9) A grant of permission by each party to conduct a physical examination of the lands offered by the other party;

(10) The terms of any assembled land exchange arrangement, pursuant to § 2201.1-1 of this part;

(11) A statement as to any arrangements for relocation of any tenants occupying non-Federal land, pursuant to § 2201.8 (c)(1)(iv) of this part;

(12) A notice to an owner-occupant of the voluntary basis for the acquisition of the non-Federal lands, pursuant to § 2201.8 (c)(1)(iv) of this part; and

(13) A statement as to the manner in which documents of conveyance will be exchanged, should the exchange proposal be successfully completed.

(d) Unless the parties agree to some other schedule, no later than 90 days from the date of the executed agreement to initiate an exchange, the parties shall arrange for appraisals, which are to be completed within timeframes and under such terms as are negotiated. In the absence of current market information reliably supporting value, the parties may agree to use other acceptable and commonly recognized methods to estimate value.

(e) An agreement to initiate an exchange may be amended by written consent of the parties or terminated at any time upon written notice by any party.

(f) Entering into an agreement to initiate an exchange does not legally bind any party to proceed with processing or to consummate a proposed exchange, or to reimburse or pay damages to any party to a proposed exchange that is delayed or is not consummated or to anyone assisting in any way, or doing business with, any such party.

(g) The withdrawal from, and termination of, an exchange proposal, or an agreement to initiate an exchange, by the authorized officer at any time prior to the notice of decision, pursuant to §2201.7-1 of this part, is not protestable or appealable under 43 CFR part 4.

§2201.1-1 Assembled land exchanges.

(a) Whenever the authorized officer determines it to be practicable, an assembled land exchange arrangement may be used to facilitate exchanges and reduce costs.

(b) The parties to an exchange may agree to such an arrangement where multiple parcels of Federal and/or non-Federal lands are consolidated into a package for the purpose of completing one or more exchange transactions over a period of time.

(c) An assembled land exchange arrangement shall be documented in the agreement to initiate an exchange, pursuant to §2201.1 of this part.

(d) Values of the Federal and non-Federal lands involved in an assembled exchange arrangement shall be estimated pursuant to §2201.3 of this part.

(e) If more than one transaction is necessary to complete the exchange package, the parties shall establish a ledger account under which the Federal and non-Federal lands can be exchanged. When a ledger account is used, the authorized officer shall:

(1) Assure that the value difference between the Federal and non-Federal lands does not exceed 25 percent of the total value of the Federal lands conveyed in the assembled land exchange up to and including the current transaction;

(2) Assure that the values of the Federal and non-Federal lands conveyed are balanced with land and/or money at least every 3 years pursuant to §2201.6 of this part; and

(3) If necessary, require from the non-Federal party a deposit of cash, bond or other approved surety in an amount equal to any outstanding value differential.

(4) Assembled land exchanges are subject to the value equalization and cash equalization waiver provisions of §2201.6 of this part. Cash equalization waiver shall only be used in conjunction with the final transaction of the

assembled land exchange and the termination of any ledger account used.

(f) The assembled exchange arrangement may be terminated unilaterally at any time upon written notice by any party or upon depletion of the Federal or non-Federal lands assembled. Prior to termination, values shall be equalized pursuant to §2201.6 of this part.

§2201.1-2 Segregative effect.

(a) If a proposal is made to exchange Federal lands, the authorized officer may direct the appropriate State Office of the Bureau of Land Management to segregate the Federal lands by a notation on the public land records. Subject to valid existing rights, the Federal lands shall be segregated from appropriation under the public land laws and mineral laws for a period not to exceed 5 years from the date of record notation.

(b) Any interests of the United States in the non-Federal lands that are covered by the exchange proposal may be segregated from appropriation under the mineral laws for a period not to exceed 5 years from the date of notation by noting the public land status records.

(c) The segregative effect shall terminate upon the occurrence of any of the following events, whichever occurs first:

(1) Automatically, upon issuance of a patent or other document of conveyance to the affected lands;

(2) On the date and time specified in an opening order, such order to be promptly issued and published by the appropriate State Office of the Bureau of Land Management in the FEDERAL REGISTER, if a decision is made not to proceed with the exchange or upon removal of any lands from an exchange proposal; or

(3) Automatically, at the end of the segregation period not to exceed 5 years from the date of notation of the public land records.

(d) Upon conveyance of public lands under section 206 of the Federal Land Policy and Management Act, mineral interests reserved by the United

States, together with the right to prospect for, mine and remove the minerals, shall be removed from the operation of the mining laws pending issuance of such regulations as the Secretary may prescribe.

§2201.1-3 Assumption of costs.

(a) Generally, parties to an exchange will bear their own costs of the exchange. However, if the authorized officer finds it is in the public interest, subject to the conditions and limitations specified in paragraphs (b) and (c) of this section, an agreement to initiate an exchange may provide that:

(1) One or more of the parties may assume, without compensation, all or part of the costs or other responsibilities or requirements that the authorized officer determines would ordinarily be borne by the other parties; or

(2) The parties may agree to make adjustments to the relative values involved in an exchange transaction in order to compensate parties for assuming costs or other responsibilities or requirements that the authorized officer determines would ordinarily be borne by the other parties. These costs or services may include but are not limited to: Land surveys, appraisals, mineral examinations, timber cruises, title searches, title curative actions, cultural resource surveys and mitigation, hazardous substance surveys and controls, removal of encumbrances, arbitration including all fees, bargaining, cure of deficiencies preventing highest and best use of the land, conduct of public hearings, assemblage of non-Federal parcels from multiple ownerships, expenses of complying with laws, regulations, and policies applicable to exchange transactions, and expenses that are necessary to bring the Federal and non-Federal lands involved in the exchange to their highest and best use for appraisal and exchange purposes.

(b) The authorized officer may agree to assume without compensation costs ordinarily borne under local custom or practice by the non-Federal party or to compensate the non-Federal party for costs ordinarily borne under local custom or practice by the United States but incurred by the non-Federal party, but only when it is clearly in the public interest and the authorized officer

determines and documents that each of the following circumstances exist:

(1) The amount of the cost assumed or compensation is reasonable and accurately reflects the value of the goods and services received;

(2) The proposed exchange is a high priority of the agency;

(3) The land exchange must be expedited to protect important Federal resource values, such as congressionally designated areas or endangered species habitat;

(4) Cash equalization funds are available for compensating the non-Federal party; and

(5) There are no other practicable means available to the authorized officer of meeting Federal exchange processing costs, responsibilities, or requirements.

(c) The total amount of adjustment agreed to as compensation for costs incurred pursuant to this section shall not exceed the limitations set forth in §2201.6 of this part.

§2201.2 Notice of exchange proposal.

(a) Upon entering into an agreement to initiate an exchange, the authorized officer shall publish a notice once a week for 4 consecutive weeks in newspapers of general circulation in the counties in which the Federal and non-Federal lands or interests proposed for exchange are located. The authorized officer shall notify authorized users, jurisdictional State and local governments, and the congressional delegation, and shall make other distribution of the notice as appropriate. At a minimum, the notice shall include:

(1) The identity of the parties involved in the proposed exchange;

(2) A description of the Federal and non-Federal lands being considered for exchange;

(3) A statement as to the effect of segregation from appropriation under the public land laws and mineral laws, if applicable;

(4) An invitation to the public to submit in writing any comments or concerns about the exchange proposal, including advising the authorized officer as to any liens, encumbrances, or other claims relating to the lands being considered for exchange; and

(5) The deadline by which comments must be received, and the name, title, and address of the official to whom comments must be sent.

(b) To be assured of consideration in the environmental analysis of the proposed exchange, all comments shall be made in writing to the authorized officer and postmarked or delivered within 45 days after the initial date of publication.

(c) The authorized officer is not required to republish descriptions of any lands excluded from the final exchange transaction, provided such lands were identified in the notice of exchange proposal. In addition, minor corrections of land descriptions and other insignificant changes do not require republication.

§ 2201.3 Appraisals.

The Federal and non-Federal parties to an exchange shall comply with the appraisal standards set forth in §§ 2201.3-1 through 2201.3-4 of this part and, to the extent appropriate, with the Department of Justice "Uniform Appraisal Standards for Federal Land Acquisitions" when appraising the values of the Federal and non-Federal lands involved in an exchange.

§ 2201.3-1 Appraiser qualifications.

(a) A qualified appraiser(s) shall provide to the authorized officer appraisals estimating the market value of Federal and non-Federal properties involved in an exchange. A qualified appraiser may be an employee or a contractor to the Federal or non-Federal exchange parties. At a minimum, a qualified appraiser shall be an individual, approved by the authorized officer, who is competent, reputable, impartial, and has training and experience in appraising property similar to the property involved in the appraisal assignment.

(b) Qualified appraisers shall possess qualifications consistent with State regulatory requirements that meet the intent of title XI of the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) (12 U.S.C. 3331). In the event a State does not have approved policies, practices and procedures regulating the activities of appraisers, the Bureau of Land Man-

agement may establish appraisal qualification standards commensurate with those adopted by other States meeting the requirements of FIRREA.

§ 2201.3-2 Market value.

(a) In estimating market value, the appraiser shall:

(1) Determine the highest and best use of the property to be appraised;

(2) Estimate the value of the lands and interests as if in private ownership and available for sale in the open market;

(3) Include historic, wildlife, recreation, wilderness, scenic, cultural, or other resource values or amenities that are reflected in prices paid for similar properties in the competitive market;

(4) Consider the contributory value of any interest in land such as minerals, water rights, or timber to the extent they are consistent with the highest and best use of the property; and

(b) Estimate separately, if stipulated in the agreement to initiate in accordance with § 2201.1 of this part, the value of each property optioned or acquired from multiple ownerships by the non-Federal party for purposes of exchange, pursuant to § 2201.1-1 of this part. In this case, the appraiser shall estimate the value of the Federal and non-Federal properties in a similar manner.

(b) In estimating market value, the appraiser may not independently add the separate values of the fractional interests to be conveyed, unless market evidence indicates the following:

(1) The various interests contribute their full value (pro rata) to the value of the whole; and

(2) The valuation is compatible with the highest and best use of the property.

(c) In the absence of current market information reliably supporting value, the authorized officer may use other acceptable and commonly recognized methods to determine market value.

§ 2201.3-3 Appraisal report standards.

Appraisals prepared for exchange purposes shall contain, at a minimum, the following information:

(a) A summary of facts and conclusions;

(b) The purpose and/or the function of the appraisal, a definition of the estate

being appraised, and a statement of the assumptions and limiting conditions affecting the appraisal assignment, if any;

(c) An explanation of the extent of the appraiser's research and actions taken to collect and confirm information relied upon in estimating value;

(d) An adequate description of the physical characteristics of the lands being appraised; a statement of all encumbrances; title information, location, zoning, and present use; an analysis of highest and best use; and at least a 5-year sales history of the property;

(e) A disclosure of any condition that is observed during the inspection of the property or becomes known to the appraiser through normal research that would lead the appraiser to believe that hazardous substances may be present on the property being appraised;

(f) A comparative market analysis and, if more than one method of valuation is used, an analysis and reconciliation of the methods used to support the appraiser's estimate of value;

(g) A description of comparable sales, including a description of all relevant physical, legal, and economic factors such as parties to the transaction, source and method of financing, effect of any favorable financing on sale price, and verification by a party involved in the transaction;

(h) An estimate of market value;

(1) The effective date of valuation, date of appraisal, signature, and certification of the appraiser;

(j) A certification by the appraiser signing the report to the following:

(1) The appraiser personally contacted the property owner or designated representative and offered the owner an opportunity to be present during inspection of the property;

(2) The appraiser personally examined the subject property and all comparable sale properties relied upon in the report;

(3) The appraiser has no present or prospective interest in the appraised property; and

(4) The appraiser has not, and will not, receive compensation that was contingent on the analysis, opinions, or conclusions contained in the appraisal report; and

(k) Copies of relevant written reports, studies, or summary conclusions prepared by others in association with the appraisal assignment that were relied upon by the appraiser to estimate value, which may include but is not limited to current title reports, mineral reports, or timber cruises prepared by qualified specialists.

§ 2201.3-4 Appraisal review.

(a) Appraisal reports shall be reviewed by a qualified review appraiser meeting the qualifications set forth in § 2201.3-1 of this part. Statements of value prepared by agency appraisers are not subject to this review.

(b) The review appraiser shall determine whether the appraisal report:

(1) Is complete, logical, consistent, and supported by a market analysis;

(2) Complies with the standards prescribed in § 2201.3-3 of this part; and

(3) Reasonably estimates the probable market value of the lands appraised.

(c) The review appraiser shall prepare a written review report, containing at a minimum:

(1) A description of the review process used;

(2) An explanation of the adequacy, relevance, and reasonableness of the data and methods used by the appraiser to estimate value;

(3) The reviewing appraiser's statement of conclusions regarding the appraiser's estimate of market value; and

(4) A certification by the review appraiser to the following:

(1) The review appraiser has no present or prospective interest in the property that is the subject of the review report; and

(2) The review appraiser has not, and will not, receive compensation that was contingent on the approval of the appraisal report.

§ 2201.4 Bargaining; arbitration.

(a) Unless the parties to an exchange agree in writing to suspend or modify the deadlines contained in paragraphs (a)(1) through (a)(4) of this section, the parties shall adhere to the following schedule:

(1) Within 180 days from the date of receipt of the appraisal(s) for review and approval by the authorized officer.

the parties to an exchange may agree on the appraised values of the lands involved in an exchange. If the parties cannot agree on the appraised values, they may agree to initiate a process of bargaining or some other process to resolve the dispute over values. Bargaining or any other process shall be based on an objective analysis of the valuation in the appraisal report(s) and shall be a means of reconciling differences in such reports. Bargaining or another process to determine values may involve one or more of the following actions:

- (i) Submission of the disputed appraisal(s) to another qualified appraiser for review;
- (ii) Request for additional appraisals;
- (iii) Involvement of an impartial third party to facilitate resolution of the value disputes; or
- (iv) Use of some other acceptable and commonly recognized practice for resolving value disputes.

Any agreement based upon bargaining shall be in writing and made part of the administrative record of the exchange. Such agreement shall contain a reference to all relevant appraisal information and state how the parties reconciled or compromised appraisal information to arrive at an agreement based on market value.

(2) If within 180 days from the date of receipt of the appraisal(s) for review and approval by the authorized officer, the parties to an exchange cannot agree on values but wish to continue with the land exchange, the appraisal(s) may, at the option of either party, be submitted to arbitration unless, in lieu of arbitration, the parties have employed a process of bargaining or some other process to determine value. If arbitration occurs, it shall be conducted in accordance with the real estate valuation arbitration rules of the American Arbitration Association. The Secretary or an official to whom such authority has been delegated shall appoint an arbitrator from a list provided by the American Arbitration Association.

(3) Within 30 days after completion of arbitration, the parties involved in the exchange shall determine whether to proceed with the exchange, modify the exchange to reflect the findings of the

arbitration or any other factors, or withdraw from the exchange. A decision to withdraw from the exchange may be made upon written notice by either party at this time or at any other time prior to entering into a binding exchange agreement.

(4) If the parties agree to proceed with an exchange after arbitration, the values established by arbitration are binding upon all parties for a period not to exceed 2 years from the date of the arbitration decision.

(b) Arbitration is limited to the disputed valuation of the lands involved in a proposed exchange, and an arbitrator's award decision shall be limited to the value estimate(s) of the contested appraisal(s). An award decision shall not include recommendations regarding the terms of a proposed exchange, nor shall an award decision infringe upon the authority of the Secretary to make all decisions regarding management of Federal lands and to make public interest determinations.

§ 2201.5 Exchanges at approximately equal value.

(a) The authorized officer may exchange lands that are of approximately equal value when it is determined that:

(1) The exchange is in the public interest and the consummation of the proposed exchange will be expedited;

(2) The value of the lands to be conveyed out of Federal ownership is not more than \$150,000 as based upon a statement of value prepared by a qualified appraiser and approved by the authorized officer;

(3) The Federal and non-Federal lands are substantially similar in location, acreage, use, and physical attributes; and

(4) There are no significant elements of value requiring complex analysis.

(b) The authorized officer shall determine that the Federal and non-Federal lands are approximately equal in value and shall document how the determination was made.

§ 2201.6 Value equalization; cash equalization waiver.

(a) To equalize the agreed upon values of the Federal and non-Federal lands involved in an exchange, either

with or without adjustments of relative values as compensation for various costs, the parties to an exchange may agree:

(1) To modify the exchange proposal by adding or excluding lands; and/or

(2) To use cash equalization after making all reasonable efforts to equalize values by adding or excluding lands.

(b) The combined amount of any cash equalization payment and/or the amount of adjustments agreed to as compensation for costs under § 2201.1-3 of this part may not exceed 25 percent of the value of the Federal lands to be conveyed.

(c) The parties may agree to waive a cash equalization payment if the amount to be waived does not exceed 3 percent of the value of the lands being exchanged out of Federal ownership or \$15,000, whichever is less. This provision shall not be applied to exchanges where the value differential is in excess of \$15,000.

(d) A cash equalization payment may be waived only after the authorized officer determines in writing how the waiver will expedite the exchange and why the public interest will be better served by the waiver.

§ 2201.7 Approval of exchanges.

§ 2201.7-1 Notice of decision.

(a) Upon completion of all environmental analyses and appropriate documentation, appraisals, and all other supporting studies and requirements to determine if a proposed exchange is in the public interest and in compliance with applicable law and regulations, the authorized officer shall decide whether to approve an exchange proposal.

(1) When a decision to approve or disapprove an exchange is made, the authorized officer shall publish a notice of the availability of the decision in newspapers of general circulation. A notice also may be published in the FEDERAL REGISTER at the discretion of the authorized officer. At a minimum, the notice shall include:

- (i) The date of decision;
- (ii) A concise description of the decision;
- (iii) The name and title of the deciding official;

(iv) Directions for obtaining a copy of the decision; and

(v) The date of the beginning of the protest period.

(2) The authorized officer shall distribute notices to State and local governmental subdivisions having authority in the geographical area within which the lands covered by the notice are located pursuant to § 2200.0-6(m) of this part, the non-Federal exchange parties, authorized users of involved Federal lands, the congressional delegation, individuals who requested notification or filed written objections, and others as appropriate.

(b) For a period of 45 days after the date of publication of a notice of the availability of a decision to approve or disapprove an exchange proposal, such decision shall be subject to protest.

(c) A right of appeal from a protest decision of the authorized officer may be pursued in accordance with the applicable appeal procedures of 43 CFR part 4.

§ 2201.7-2 Exchange agreement.

(a) The parties to a proposed exchange may enter into an exchange agreement subsequent to a decision by the authorized officer to approve the exchange, pursuant to § 2201.7-1 of this part. Such an agreement is required if hazardous substances are present on the non-Federal lands. An exchange agreement shall contain the following:

(1) Identification of the parties, a description of the lands and interests to be exchanged, identification of all reserved and outstanding interests, the amount of any necessary cash equalization, and all other terms and conditions necessary to complete the exchange;

(2) The terms regarding responsibility for removal, indemnification ("hold harmless" agreement), or other remedial actions concerning any hazardous substances on the involved non-Federal lands;

(3) A description of the goods and services and their corresponding costs for which the noncomplying party is liable in the event of failure to perform or to comply with the terms of the exchange agreement; and

(4) The agreed upon values of the involved lands.

(b) An exchange agreement, as described in paragraph (a) of this section, is legally binding on all parties, subject to the terms and conditions thereof, provided:

- (1) Acceptable title can be conveyed;
- (2) No substantial loss or damage occurs to either property from any cause;
- (3) No undisclosed hazardous substances are found on the involved Federal or non-Federal lands prior to conveyance;

(4) In the event of a protest, or of an appeal from a protest decision under 43 CFR part 4, a decision to approve an exchange pursuant to §2201.7-1 is upheld; and

(5) The agreement is not terminated by mutual consent or upon such terms as may be provided in the agreement.

(c) Absent an executed legally binding exchange agreement, any action taken by one or more of the parties, or a failure of one or more of the parties to take any action, prior to consummation of an exchange does not create any legal obligation or right enforceable against or enjoyed by any party.

§2201.8 Title standards.

(a) *Title evidence.* (1) Unless otherwise specified by the Office of the Solicitor of the Department of the Interior, evidence of title for the non-Federal lands being conveyed to the United States shall be in conformance with the Department of Justice regulations and "Standards for the Preparation of Title Evidence in Land Acquisitions by the United States" in effect at the time of conveyance.

(2) The United States is not required to furnish title evidence for the Federal lands being exchanged.

(b) *Conveyance documents.* (1) Unless otherwise specified by the Office of the Solicitor of the Department of the Interior, all conveyances to the United States shall be prepared, executed, and acknowledged in recordable form and in accordance with the Department of Justice regulations and "Standards for the Preparation of Title Evidence in Land Acquisition by the United States" in effect at the time of conveyance.

(2) Conveyances of lands from the United States shall be by patent, quitclaim deed, or deed without express or

implied warranties, except as to hazardous substances pursuant to §2200.0-6(j)(1) of this title.

(c) *Title encumbrances.*—(1) *Non-Federal lands.* (i) Title to the non-Federal lands must be acceptable to the United States. For example, encumbrances such as taxes, judgment liens, mortgages, and other objections or title defects shall be eliminated, released, or waived in accordance with requirements of the preliminary title opinion of the Office of the Solicitor of the Department of the Interior or the Department of Justice, as appropriate.

(ii) The United States shall not accept lands in which there are reserved or outstanding interests that would interfere with the use and management of land by the United States or would otherwise be inconsistent with the authority under which, or the purpose for which, the lands are to be acquired. Reserved interests of the non-Federal landowner are subject to agreed upon covenants or conditions included in the conveyance documents.

(iii) Any personal property owned by the non-Federal party that is not a part of the exchange proposal should be removed by the non-Federal party prior to acceptance of title by the United States, unless the authorized officer and the non-Federal party to the exchange previously agree upon a specified period to remove the personal property. If the personal property is not removed prior to acceptance of title or within the otherwise prescribed time, it shall be deemed abandoned and shall become vested in the United States.

(iv) The exchange parties must reach agreement on the arrangements for the relocation of any tenants. Qualified tenants occupying non-Federal lands affected by a land exchange may be entitled to benefits under 49 CFR 24.2. Unless otherwise provided by law or regulation (49 CFR 24.101(a)(1)), relocation benefits are not applicable to owner-occupants involved in exchanges with the United States provided the owner-occupants are notified in writing that the non-Federal lands are being acquired by the United States on a voluntary basis.

(2) *Federal lands.* If Federal lands proposed for exchange are occupied under

grant, permit, easement, or non-mineral lease by a third party who is not a party to the exchange, the third party holder of such authorization and the non-Federal party to the exchange may reach agreement as to the disposition of the existing use(s) authorized under the terms of the grant, permit, easement, or lease. The non-Federal exchange party shall submit documented proof of such agreement prior to issuance of a decision to approve the land exchange, as instructed by the authorized officer. If an agreement cannot be reached, the authorized officer shall consider other alternatives to accommodate the authorized use or shall determine whether the public interest will be best served by terminating such use in accordance with the terms and provisions of the instrument authorizing the use.

§2201.9 Case closing.

(a) *Title transfers.* Unless otherwise agreed, and notwithstanding the decision in *United States v. Schurz*, 102 U.S. 378 (1880), or any other law or ruling to the contrary, title to both the non-Federal and Federal lands simultaneously shall pass and be deemed accepted by the United States and the non-Federal landowner, respectively, when the documents of conveyance are recorded in the county clerk's or other local recorder's office. Before recordation, all instructions, requirements, and conditions set forth by the United States and the non-Federal landowner shall be met. The requirements and conditions necessary for recordation at a minimum will include the following, as appropriate:

(1) The determination by the authorized officer that the United States will receive possession, acceptable to it, of such lands; and

(2) The issuance of title evidence as of the date and time of recordation, which conforms to the instructions and requirements of the Office of the Solicitor's preliminary title opinion.

(b) *Automatic segregation of lands.* Subject to valid existing rights, non-Federal lands acquired through exchange by the United States automatically shall be segregated from appropriation under the public land laws and mineral laws until midnight of the 90th

day after acceptance of title by the United States, and the public land records shall be noted accordingly. Except to the extent otherwise provided by law, the lands shall be open to the operation of the public land laws and mineral laws at midnight 90 days after the day title was accepted unless otherwise segregated pursuant to part 2300 of this title.

(c) *Notice to State and local governments.* Following the transfer of title to the Federal lands involved in an exchange, notice will be given to State and local officials as prescribed in §2200.0-6(m) of this part.

